Differences in Sickness Allowance Receipt between Swedish Speakers and Finnish Speakers in Finland: A Register-based Study

KAARINA REINI
JAN SAARELA
Åbo Akademi University, Finland

Abstract

Previous research has documented lower disability retirement and mortality rates of Swedish speakers as compared with Finnish speakers in Finland. This paper is the first to compare the two language groups with regard to the receipt of sickness allowance, which is an objective health measure that reflects a less severe poor health condition. Register-based data covering the years 1988–2011 are used. We estimate logistic regression models with generalized estimating equations to account for repeated observations at the individual level. We find that Swedish-speaking men have approximately 30 percent lower odds of receiving sickness allowance than Finnish-speaking men, whereas the difference in women is about 15 percent. In correspondence with previous research on all-cause mortality at working ages, we find no language-group difference in sickness allowance receipt in the socially most successful subgroup of the population.

Keywords: Finland, language groups, sickness allowance,

Introduction

Swedish speakers in Finland are known to have certain health advantages over Finnish speakers. From the perspective that both language groups are native and equal, this health gradient is remarkable and it has been extensively studied. Life expectancy at birth is three years longer for Swedish-speaking boys than for Finnish-speaking boys, while the difference in girls is about one year (Saarela and Finnäs 2006). The mortality difference is particularly marked among middle-aged men, also when accounting for socioeconomic and demographic confounders (Koskinen and Martelin 2003), and if restricting analyses to people in the coastal area with both Swedish- and Finnish-speaking settlement (Saarela and Finnäs 2016). The language-group mortality difference is highest for deaths related to alcohol, suicide and other external causes (Sipilä and Mar-

tikainen 2009). However, within the presumably most successful subgroup of the population, that is, employed persons with a partner, there appears to be no language-group difference in all-cause mortality at working ages (Saarela and Finnäs 2005a).

Rates of disability pension, which is another objective indicator of poor health, are also lower for Swedish speakers than for Finnish speakers. Like with mortality, the language-group difference is larger in men than in women (Saarela and Finnäs 2002; 2005b). The disability retirement risk is about 25 percent lower for Swedish-speaking men than for Finnish-speaking men, while the difference in women is approximately 15 percent.

Research based on other health indicators reach similar conclusions. Swedish speakers tend to report better self-rated health (Nyqvist and Martelin 2007), lower levels of psychological distress (Nyqvist et al. 2008), and they have lower risk of severe mental disorders, such as schizophrenia spectrum disorders (Suvisaari et al. 2014). Accordingly, sense of coherence and sense of mastery, which reflects aspects of positive mental well-being, have been reported higher in Swedish speakers than in Finnish speakers (Volanen et al. 2006; Reini and Nyqvist 2017).

Despite this seemingly abundant documentation of health inequalities between the two language groups, the underlying reasons are not fully clear. Partly they may stem from variation in health-related behaviours, such as alcohol consumption and smoking, which are culturally dependent (Paljärvi et al. 2009, Sipilä and Martikainen 2009). Biological factors may also play a role. Genome-wide association studies have found that, albeit the mixture is high, Swedish speakers and Finnish speakers in Finland differ genetically (Salmela et al. 2008; Salmela et al. 2011). This relates to an overall correspondence between geographic and genetic distances that presumably depends on how Finland was inhabited. The degree and duration of separation of individuals' ancestors may have lead to genetic differentiation and the inheritance of genetic diseases as observed today. However, it is not clear whether any genetic variation between the two language groups affect mortality as observed at the population level (Saarela and Finnäs, 2010). There is nevertheless a strong interrelation between area of birth, and even parent's area of birth (Saarela and Finnäs 2011), and the mortality risk. Accordingly, part of the language-group difference in mortality and disability retirement relate to geographical extraction (Saarela and Finnäs 2005b), which in turn might be reflective of variation in social networks and social cohesion (cf. Hyyppä and Mäki 2001; Nyqvist et al. 2008).

Whether the two language groups differ on sickness allowance receipt has not been studied before. Receipt of sickness allowance is conditional on a statement of a general practitioner in medicine. It is consequently an objective measure of health, but it reflects a less severe poor health status than disability pension. Sickness allowance is a proxy for temporary illness (more than just a flu), while receipt of disability pension is suggestive of prolonged poor health or permanent illness. Hence, by comparing Swedish speakers and Finnish speakers with regard to receipt of sickness allowance, as we do in this paper, we will see if they differ on an objective, but less grave, measure of overall health than previously analysed.

The outcome should nevertheless not be underrated. Sickness absence constitutes a substantial cost for the society. In 2016, the Social Insurance Institution of Finland (Kela) paid sickness allowance benefits of 813 million euros to over 285,000 persons. For employers, sickness absence incurs elevated costs related to the replacement of staff, management, human resources and occupational health, lost productivity, and reduced quality of services (Whitaker 2001). The estimated cost of one sickness day is 240–380 euros (Lehtonen 2010). Sickness absence also has notable impacts on the individual, as it may affect employment contracts and the position in the labour market and thus result in weaker economic resources. Irrespective of their length, sickness periods increase the risk for subsequent work absence (Helgesson et al. 2016). In the long term, sickness absence increases the risk of adverse economic and social conditions (Bryngelson 2009), predicts disability pension (Gjesdal et al. 2004; Kivimäki et al. 2007), and signifies the risk of becoming unemployed (Virtanen et al. 2006). The demographic change, and especially the decrease of the working-age population, emphasizes the need to reduce sickness absence and lengthen work careers.

Data and methods

The data used, with permission number TK-53-768-12, come from Statistics Finland. They constitute a random sample of five percent of all Finnish speakers, and a similarly constructed 20 percent random sample of all Swedish speakers, observed on an annual basis throughout the period 1988–2011, subject to that the persons were living in the country at any of the years.

The outcome variable of interest, sickness allowance receipt, refers to medically certified sickness absence. The Social Insurance Institution of Finland pays sickness allowance (full or partial) to non-retired residents aged 16–67 years in case of work incapacity due to illness. A medical certificate is a precondition for the benefit. The allowance is available after a specified waiting period, which is the first day of illness and the subsequent nine working days. Currently, the full benefit can be received for a maximum period of 300 working days (approximately one calendar year) per illness within two years. The compensation degree depends on previous earnings and benefits. The compensation rate is 70 percent up to a threshold where after it decreases. If work incapacity remains after the maximum period, one may apply for disability pension. The sickness allowance system has changed during the years of our study, but the changes have naturally affected Swedish speakers and Finnish speakers in an equal manner. In 1993, the waiting period increased from seven to nine days after the first day of illness. In 1996, people with no previous income were denied the allowance, but they regained the right in 2002.

In the data used, there is information about the amount of sickness allowance receipt received per calendar year, but no information about the medical reason for sickness allowance receipt or any explicit record of the length of sickness absence spells. Con-

sidering that we want to compare Swedish speakers and Finnish speakers in a very straightforward and simple manner, we have chosen to dichotomise the outcome variable. Thus, for each calendar year, we identify whether a person has received any income from sickness allowance. If so, the variable is coded as 1, and 0 otherwise.

The probability of sickness allowance receipt is estimated with logistic regression models. Since the outcome variable for each individual is repeatedly measured over each calendar, we specify the models with generalized estimating equations (Twisk 2004; Wang 2014). This technique corrects for within-subject correlations and thus accounts for the dependency of observations that belong to the same individual (Liang and Zeger 1986; Zeger and Liang 1986). In practice, the estimation process begins with a regression in which all observations are assumed independent. In the second step, parameters of a working correlation matrix are estimated based on the residuals from this first step. In the last step, regression coefficients are re-estimated to correct for the dependency of the observations. The process alternates between the second and third steps until regression coefficients and standard errors stabilize. We have used an unstructured working correlation matrix, since it is more flexible than any other alternative in assessing the within-subject correlations.

Like with mortality and disability retirement rates (Saarela and Finnäs 2005b, 2011; THL Sotkanet 2017), sickness allowance receipt exhibits a geographical pattern. It tends to increase in the southwest to northeast direction, and is particularly low in the coastal area, which has both Swedish- and Finnish-speaking settlement (Figure 1). Like most other research concerned with health comparisons of Swedish and Finnish speakers (see e.g. Saarela and Finnäs 2002; 2006), we restrict our analyses to this area (demarcated on the map in Figure 1). Including other regions would be futile, since less than five per cent of all Swedish speakers in Finland live outside the coastal area. They would also lead to even higher language-group differentials than those observed here, foremost because of the geographical variation in sickness allowance receipt among the Finnish speakers.

Age, period, educational level, income quintile, family situation, job industry, region of residence, and region of birth are used as control variables. They are register-based and measured at the beginning of each calendar year. Age is categorised into five-year intervals. Period is roughly categorised in order to account for changes in the system of sickness allowance receipt over time. Educational level distinguishes primary, secondary, and tertiary degrees. Family situation distinguishes persons who live with a partner, singles and all others. Job industry distinguishes people employed in primary industries, manufacturing and construction, trade, hotels and restaurants, transport and communication, financial intermediation, insurance and business services, public and other services, unemployed persons, and people outside the labour force. Income quintiles refer to taxable income in 2011 year's prices. Region of residence distinguishes the Helsinki region (Helsinki, Espoo, Vantaa and Kauniainen), the rest of Uusimaa, the Turku region plus the Åland Islands, and Pohjanmaa with surroundings. Birth region distinguishes people born in Southern, Western, Eastern, and Northern Finland (cf.

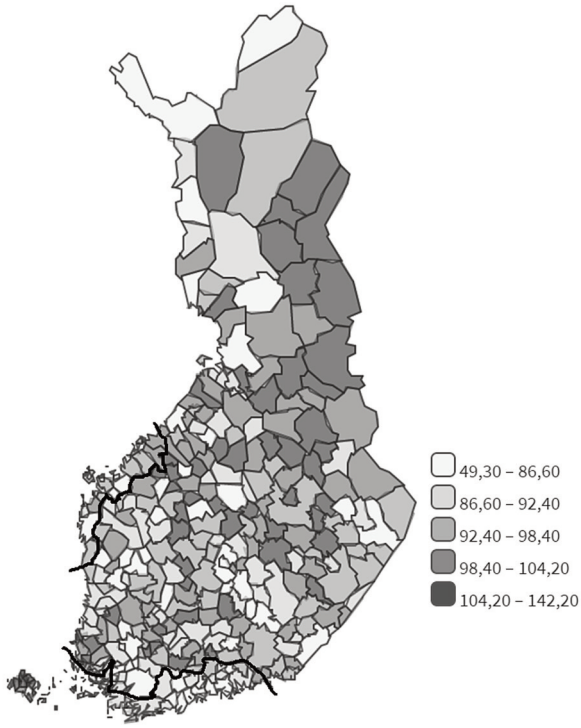

Figure 1. *Sickness allowance recipients per 1,000 persons aged 16–64 years in municipalities in Finland in 2016. Source: THL Sotkanet (2017). The coastal area studied in this paper is demarcated on the map.*

Saarela & Finnäs 2005b), and those born abroad. We have attempted to use also more detailed categorisations of the control variables, but the results were almost similar to the ones reported here.

The analyses, which study men and women separately, focus on differences between Swedish speakers and Finnish speakers, who are distinguished by their unique mother tongue in the population register. People with any other mother tongue are excluded from analyses. In the results section, we present odds ratios and 95 per cent confidence intervals. All analyses were performed with SPSS 23.

Figure 2 gives the percentage of people with sickness allowance and disability pension, respectively, across age and by language group and sex. In the ages we focus on, 20–56 years, the share of people with sickness allowance is consistently and notably higher in Finnish-speaking men than in Swedish-speaking men, whereas the language-group difference in women is less marked. We can also see that sickness allowance receipt is not very common at young adulthood. After the mid-50s, it starts to decline in occurrence because disability retirement becomes much more frequent. Many people with poor health tend to move from being on sickness allowance receipt to becoming disability retirement recipients before they reach the official retirement age. In our analyses of sickness allowance receipt, we therefore focus on people aged 20–56 years. In the (unweighted) data, there are 74,850 are Finnish speakers and 44,014 Swedish speakers.

Figure 2. *Percentage sickness allowance recipients (SA, left-hand y-axis) and disability pension recipients (DP, right-hand y-axis) by age, language group and sex in the coastal area of Finland, 1988-2011. The study ages 20-56 years are denoted by the ages within and including the vertical lines.*

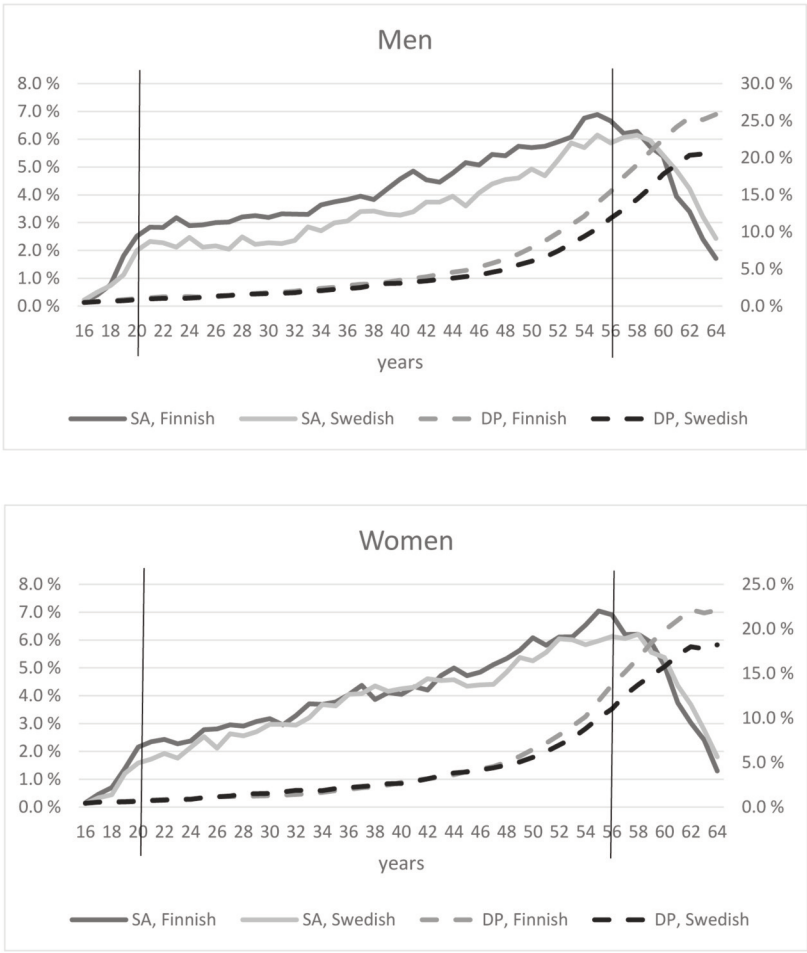

Table 1 gives a description of the distributions of the control variables by sex and language group, and the percentage share of sickness allowance recipients in each category. In accordance with previous research (Saarela and Finnäs 2005a, 2005b), we see that Finnish speakers and Swedish speakers do not differ much in socioeconomic and demographic characteristics, but primarily on region of residence and region of birth. Within most socioeconomic and demographic subgroup, sickness allowance receipt tends to be higher among Finnish speakers than among Swedish speakers.

Table 1. *Percentage distribution of the control variables by sex and language group and percentage sickness allowance recipients in each category.*

	Distribution				Received sickness allowance			
	Men		Women		Men		Women	
Variable	**Finnish**	**Swedish**	**Finnish**	**Swedish**	**Finnish**	**Swedish**	**Finnish**	**Swedish**
Age in years								
20–24	12.8	13.1	12.6	12.9	2.8	2.2	2.2	1.8
25–29	14.6	13.0	14.3	12.8	3.0	2.1	2.8	2.4
30–34	14.7	13.0	14.3	12.9	3.3	2.4	3.3	3.1
35–39	14.3	13.3	14.2	13.5	3.8	3.1	3.9	4.0
40–44	14.4	14.3	14.5	14.5	4.5	3.5	4.3	4.3
45–49	13.5	14.5	13.8	14.4	5.1	4.0	4.9	4.5
50–54	11.6	13.7	12.1	13.7	5.7	4.9	5.7	5.4
55–56	4.0	5.1	4.3	5.2	6.2	5.6	6.4	5.5
Time period								
1988–1992	19.9	21.7	20.1	21.9	4.7	3.6	4.4	4.2
1993–1995	12.2	13.0	12.4	13.1	4.3	3.7	4.4	3.9
1996–2001	25.5	25.6	25.7	25.6	4.1	3.3	4.0	3.7
2002–2005	17.1	16.3	17.0	16.1	3.9	3.2	3.6	3.6
2006–2008	12.6	11.8	12.4	11.7	3.7	3.4	3.5	3.6
2009–2011	12.6	11.6	12.3	11.5	3.4	2.9	3.7	3.5
Region of residence								
Helsinki region	56.8	23.8	59.0	24.9	3.7	2.4	3.6	3.1
Rest of Uusimaa	24.4	24.6	22.6	25.0	4.7	3.5	4.5	3.8
Turku region and Åland	12.2	17.7	12.3	17.7	3.9	3.2	4.2	4.0
Pohjanmaa	6.5	33.9	6.2	32.5	5.3	4.0	4.9	4.2
Region of birth								
Southern Finland	53.6	59.7	48.1	60.1	4.0	3.1	3.8	3.6
Western Finland	23.0	35.8	24.7	35.2	3.9	3.8	3.8	4.0
Eastern Finland	15.3	0.9	17.6	1.0	4.4	3.7	4.3	4.3
Northern Finland	7.1	0.2	8.7	0.2	4.2	2.6	4.5	4.6
Abroad	1.0	3.4	1.0	3.5	3.3	3.1	3.4	4.0
Family situation								
With partner	63.8	67.0	64.0	69.8	3.7	3.4	3.7	3.9
Single	25.7	18.4	31.1	22.2	5.0	3.9	4.7	4.2
Other	10.5	14.6	4.9	8.0	4.0	2.7	2.5	1.7
Education								
Basic	23.2	25.1	20.2	20.3	6.0	5.2	6.5	5.8
Secondary	45.0	42.4	40.4	40.9	4.6	3.5	4.1	4.0
Tertiary	31.8	32.5	39.3	38.8	1.9	1.8	2.5	2.5

Job industry								
Primary industries	1.0	8.1	0.7	4.2	7.9	7.5	10.4	10.5
Manufacturing and construction	26.8	26.3	9.5	8.0	5.2	3.4	4.4	4.1
Trade, hotel and restaurants	13.8	13.4	14.6	12.0	2.8	2.3	4.7	3.6
Transport and communication	9.9	11.6	5.1	5.0	5.1	3.7	7.9	8.0
Financial intermediation, insurance and business serv.	14.1	10.2	14.5	9.4	2.2	1.9	2.8	2.5
Public and other services	13.9	13.3	35.2	40.9	1.9	1.9	2.7	2.7
Unemployed	10.4	7.2	7.5	6.5	6.1	5.2	7.0	6.8
Outside labour force	10.1	10.0	13.1	14.0	5.2	3.4	4.0	3.2
Income quintile								
1st	18.0	16.9	19.7	21.6	4.7	3.7	4.4	3.9
2nd	13.4	15.0	23.0	26.8	5.5	4.8	5.0	4.5
3rd	15.9	17.6	24.4	24.0	4.7	3.9	4.0	3.6
4th	22.6	22.3	19.6	17.4	4.4	3.2	3.3	3.3
5th	30.0	28.2	13.4	10.3	2.5	2.1	2.4	2.7
Total	100	100	100	100	4.2	3.5	4.1	3.9
Number of individuals	36,475	22,662	38,375	21,352				
Number of observations	452,971	314,024	483,099	296,248				

Results of multivariate analyses

For the logistic regression analysis (Table 2), we estimated models with different sets of variables, in order to show how the inclusion of additional variables affect the estimate for the difference in sickness allowance receipt between the two language groups. Results are displayed for models estimated for ages 20–44 years, 45–56 years, and 20–56 years, respectively. We find that the language-group difference in sickness allowance receipt is not to any considerable extent dependent on socioeconomic and demographic variables, region of residence, or region of birth. In Model 2, which controls for age and period, the odds ratio between Swedish and Finnish speakers is 0.79 for men aged 20–56 years. It widens to 0.71 when region of residence is accounted for in Model 3, which reflects that Finnish speakers in the study area live in regions with an overall lower rate of sickness allowance receipt than Swedish speakers do. In Model 8, with the full set of control variables, the odds ratio is still as low as 0.71. Corresponding odds ratios for women are 0.91, 0.83, and 0.84. Thus, Swedish-speaking men have almost 30 percent lower odds of sickness allowance receipt than Finnish-speaking men, while Swedish-speaking women have over 15 percent lower odds than Finnish-speaking women, even when we account for characteristics differences.

Table 2. *Odds ratios of sickness allowance receipt between Swedish speakers and Finnish speakers in alternative models (95% confidence intervals in parentheses).*

	Obser-vations	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
		Language	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
			+	+	+	+	+	+	+
MEN			Age and Period	Region	Region of birth	Family situation	Education	Industry	Income
20–56 years	766 995	**0.83** (0.79-0.86)	**0.79** (0.76-0.82)	**0.71** (0.68-0.74)	**0.70** (0.66-0.72)	**0.71** (0.67-0.73)	**0.73** (0.70-0.76)	**0.71** (0.68-0.74)	**0.71** (0.68-0.74)
20–44 years	530 491	**0.78** (0.74-0.81)	**0.77** (0.73-0.80)	**0.69** (0.66-0.73)	**0.68** (0.64-0.71)	**0.68** (0.64-0.72)	**0.71** (0.67-0.75)	**0.70** (0.66-0.74)	**0.70** (0.66-0.74)
45–56 years	236 504	**0.83** (0.78-0.87)	**0.81** (0.77-0.86)	**0.74** (0.68-0.76)	**0.74** (0.68-0.77)	**0.75** (0.68-0.78)	**0.78** (0.72-0.82)	**0.75** (0.69-0.79)	**0.74** (0.69-0.79)
WOMEN									
20–56 years	779 347	**0.95** (0.92-0.99)	**0.91** (0.88-0.95)	**0.83** (0.79-0.86)	**0.83** (0.79-0.86)	**0.84** (0.80-0.87)	**0.87** (0.82-0.90)	**0.85** (0.81-0.89)	**0.84** (0.80-0.88)
20–44 years	534 583	**0.95** (0.90-0.99)	**0.94** (0.89-0.98)	**0.86** (0.82-0.91)	**0.85** (0.80-0.90)	**0.86** (0.81-0.90)	**0.89** (0.84-0.94)	**0.88** (0.83-0.93)	**0.88** (0.83-0.93)
45–56 years	244 764	**0.91** (0.87-0.96)	**0.89** (0.84-0.94)	**0.80** (0.75-0.85)	**0.82** (0.76-0.87)	**0.83** (0.77-0.88)	**0.84** (0.79-0.90)	**0.81** (0.76-0.87)	**0.80** (0.75-0.87)

Odds ratios in bold are statistically significant at the five per cent level.

We proceeded by stratifying the data according to each main characteristic. The results are summarised in Table 3. They reveal a remarkably consistent pattern for the lower odds of sickness allowance receipt in Swedish speakers across almost all categories. Only for women in the fourth and fifth income quintiles, there is no language-group difference in sickness allowance receipt in the fully adjusted models. However, for both sexes there is a tendency that the between-group difference is smaller within what may be considered "better positioned" categories, that is, in people with tertiary-level educated, those with high income, people in the labour force, and those with a partner.

Table 3. *Odds ratios of sickness allowance receipt between Swedish speakers and Finnish speakers within socioeconomic and demographic categories of the population (95% confidence intervals in parentheses).*

	Men 20–56 years		Women 20–56 years	
	Unadjusted	**Fully adjusted**	**Unadjusted**	**Fully adjusted**
Education				
Basic	**0.83** (0.79-0.89)	**0.70** (0.65-0.75)	**0.90** (0.84-0.96)	**0.76** (0.71-0.82)
Secondary	**0.76** (0.71-0.80)	**0.69** (0.65-0.73)	0.96 (0.90-1.01)	**0.88** (0.82-0.94)
Tertiary	0.94 (0.87.1.02)	**0.83** (0.76-0.91)	0.99 (0.92-1.05)	**0.91** (0.84-0.98)
Income quintile				
1st	**0.81** (0.75-0.87)	**0.75** (0.69-0.81)	0.**89** (0.84-0.95)	**0.80** (0.74-0.86)
2nd	**0.82** (0.77-0.88)	**0.68** (0.63-0.73)	**0.91** (0.86-0.96)	**0.80** (0.74-0.84)
3rd	**0.82** (0.76-0.87)	**0.69** (0.64-0.74)	**0.92** (0.87-0.98)	**0.84** (0.78-0.90)
4th	**0.78** (0.72-0.83)	**0.68** (0.62-0.73)	1.01 (0.94-1.09)	0.96 (0.87-1.04)
5th	**0.87** (0.80-0.93)	**0.78** (0.71-0.84)	1.11 (1.00-1.24)	1.05 (0.92-1.18)
Work status				
Employed	**0.87** (0.83-0.91)	**0.75** (0.71-0.78)	1.00 (0.96-1.04)	**0.89** (0.84-0.93)
Unemployed	**0.83** (0.75-0.92)	**0.76** (0.69-0.83)	0.90 (0.82-1.00)	**0.85** (0.77-0.93)
Outside labour force	**0.69** (0.64-0.74)	**0.66** (0.60-0.72)	**0.81** (0.75-0.88)	**0.78** (0.71-0.85)
Family status				
With partner	**0.89** (0.85-0.94)	**0.73** (0.69-0.77)	1.03 (0.98-1.07)	**0.86** (0.81-0.90)
Single	**0.81** (0.76-0.87)	**0.71** (0.66-0.76)	**0.92** (0.86-0.98)	**0.83** (0.77-0.89)
Other	**0.69** (0.63-0.75)	**0.65** (0.58-0.71)	**0.84** (0.75-0.93)	**0.70** (0.60-0.82)

The results are based on models stratified according to each characteristic. In total, 56 models were consequently estimated.
Fully adjusted models include age group, period, region of residence, region of birth, family situation, education, industry and income.
Odds ratios in bold are statistically significant at the five per cent level.

We therefore proceeded a step further and categorised the individuals as (1) "successful", (2) "less successful", and (3) "unsuccessful" on basis of several socioeconomic and demographic characteristics. We restrict to ages 30–56 years, so that the characteristics can be interpretable across groups. In the first category, we assign employed people with tertiary-level education, in the highest income quintile, who had a partner. To obtain approximately equal group sizes for each sex, women in both the fourth and the fifth income quintiles belong to this group. The group amounts to 20.0 per cent of all men and 20.7 per cent of all women in the data. The third group consists of singles with no employment, who had primary or secondary education, and who were in the first income quintile. The group amounts to 9.0 per cent of all men and 7.4 per cent of all women in the data. The middle category constitutes all others and, thus, the great majority of all individuals.

It clearly comes out that, in the socially most successful group, there is no language-group difference in sickness allowance receipt (Table 4). In men, the adjusted odds ratio is 0.95 (95% CI: 0.77-1.09) and in women 1.00 (95% CI: 0.83-1.15). This finding is consistent with previous research on all-cause mortality (Saarela and Finnäs 2005a), which found that, in both employed men and women with a partner, there is no language-group mortality difference at working ages. Thus, being socially successful and having good health appear to go hand in hand with regard to the language-group difference in both mortality and sickness allowance receipt. In the other categories, the language-group odds ratio in sickness allowance receipt between Swedish speakers and Finnish speakers is notably higher. In men, it is 0.73 (95% CI: 0.68-0.76) in the middle category and 0.85 (95% CI: 0.74-0.97) in the least successful category. In women, the corresponding odds ratios are 0.85 (95% CI: 0.81-0.90) and 0.72 (95% CI: 0.61-0.86).

Discussion

Our analyses reveal that Swedish-speaking men have approximately 30 per cent lower odds of sickness allowance receipt than Finnish-speaking men, whereas the difference in women is about 15 per cent. This substantial difference should be of utmost public health concern, considering that both language groups are subject to the same social and health care system, and they have access to it in their own language.

A more pronounced language-group health gradient in men than in women, and the fact that socioeconomic and demographic variables explain only little of the gradient, are findings that corroborate previous research on disability pension and mortality (Saarela and Finnäs 2002; 2005b). The disability retirement risk is about 25 per cent lower for Swedish-speaking men than for Finnish-speaking men, while the difference in women is approximately 15 per cent. As related to our findings on sickness allowance receipt, this is a striking similarity. Thus, an important conclusion from this paper is that there is considerable health variation across the two language groups also in terms of an objective health measure that reflects a less severe poor health condition than permanent illness.

Table 4. *Odds ratios of sickness allowance receipt between Swedish and Finnish speakers within groups that differ on social success (95% confidence interval in parentheses).*

	Men 30–56 years				Women 30–56 years			
Characteristics of the group	**Unadjusted**	**Fully adjusted**	**# obs.**	**# ind.**	**Unadjusted**	**Fully adjusted**	**# obs.**	**# ind.**
(1) With partner + employed + tertiary education + highest income quintile	1.08 (0.92-1.26)	0.95 (0.77-1.09)	104,622	12,341	1.05 (0.91-1.19)	1.00 (0.83-1.15)	95,003	12,966
(2) Middle group (all others except above and below)	**0.84** (0.80-0.88)	**0.73** (0.68-0.76)	429,893	44,186	0.97 (0.93-1.01)	**0.85** (0.81-0.90)	459,886	45,046
(3) Without partner + not employed + primary or secondary education + 1st and 2nd income quintiles	**0.85** (0.76-0.96)	**0.85** (0.74-0.97)	26,528	5,602	**0.75** (0.66-0.90)	**0.72** (0.61-0.86)	18,590	4,652

Fully adjusted models include age group, period, region of residence and region of birth.
For women, the highest income quintile refers to both the 4th and the 5th quintiles.
Odds ratios in bold are statistically significant at the five per cent level.

When stratifying the data into subgroups that differ on "social success", in terms of employment, education, income and family situation, we see a pattern that also mirrors previous research on all-cause mortality at working ages (Saarela and Finnäs 2005a). In the socially most successful group, that is, employed tertiary-level educated people with employment and high income, there is no language-group difference in sickness allowance receipt.

Another striking finding is that Finnish-speaking women in the socially least successful group are those who are in the poorest relative position as compared with their Swedish-speaking counterparts. In men, the largest difference is in the intermediate group that contains the lion's share of all individuals. We can only speculate about the reason behind these results. However, it seems plausible that, if social cohesion is larger among Swedish speakers than among Finnish speakers, as often has been argued (see e.g. Nyqvist et al., 2008), it may protect women in the poorest social position from weak health, but perhaps not men to the same extent. Present results consequently suggest that, reasons behind the language-group health differential in Finland should be sought for in latent mechanisms that concurrently select people into cohabitation, employment and education.

Register data on sickness allowance receipt is generally to be preferred over self-reported measures of sickness absence (Svedberg et al. 2010). An obvious strength of this study is consequently the population-based data we have used, which imply non-selective participation and medically screened cases. Surveys, in contrast, may offer some additional useful information related to health behaviours, health literacy and lifestyles, but they often suffer from problems with non-participation and selective response (Knapstad et al. 2016). Sickness allowance receipt may nevertheless be considered a more complex health measure than disability pension. For instance, the uptake of sick leave relates to the business cycle, so that rates of sickness allowance receipt are high when unemployment rates are low, and low when unemployment rates are high (Pichler 2015). More complexity also stem from legislation and insurance policies. Generous sickness allowance policies may lead to incentives that support long sick leave periods. However, since legislation is the same for both Finnish and Swedish speakers, the incentives should also be the same and cannot reasonably affect the language-group differences as observed here.

Conclusions that we can draw are limited by the absence of information about the medical reasons for sickness allowance receipt in the data used. The two major causes for sick leave in Finland are musculoskeletal disorders, which amounted to 31 per cent of all paid days with sick leave in 2016, and mental health problems, which amounted to 26 per cent (Kela 2017). It would have been informative to study whether there are language-group differences in these respects. In the present data, we could observe some associations between sickness allowance receipt and subsequent alcohol-related deaths (not shown), but a more in-depth study is needed to investigate this potential interrelation.

Since the intention with this paper was to provide the first evidence of differences in take-up of sickness allowance receipt between Finnish and Swedish speakers, we aimed for a simple setup in which we estimated the likelihood of receiving the benefit for each calendar year. Future studies in this area may tentatively analyse spell lengths, concurrent take-up of sickness allowance, and perhaps even short sickness spells below the waiting period. Considering that latent selection seems to play an important role in the context of language-group comparisons, depicting health trajectories in each language group may be a scientific leap forward. In a health promotion perspective, research on how and why people shift within and between various health phases over their life course is utmost needed.

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