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**Too sick to work, too healthy to qualify: a cross country analysis of the effect of changes to disability benefits**

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**Abstract:**

Background: In order to raise employment rates among the older workforce many countries including Denmark and Sweden have implemented reforms that narrowed eligibility criteria for disability benefits. This creates in combination with increasing work demands a pincer movement where in particular those with moderate health problems might not be able to comply with work demands and at the same time not qualify for the more permanent disability benefits and end up with temporary means tested or no benefits. This paper examines whether this is actually what has happened before and after the reforms.

Methods: The European SHARE study waves 1, 2, 4, 5, and 6 in Denmark and Sweden for the age group 50-59 (N=5,355) was used to analyze changes in employment rates and benefits among people with different levels of health before, during and after reforms that in Denmark were implemented in 2011-15 and in Sweden 2003-09. Interaction between time and health in relation to employment vs permanent or temporary benefits was used as criterion for whether our hypotheses was confimed.

Results: Overall, employment rates has increased in the age group, but only among the healthy. The odds ratio for receiving temporary or no benefits increased from 1.22 (CI 0.81-1.82) before to 1.73 (CI 1.14-2.61) after reforms for those 29% with moderate health problems and from 2.89 (CI 1.66-5.03) to 6.71 (CI 3.94-11.42) among those 11% with severe health problems. The interaction between time and health was statistically significant (P < 0.001).

Conclusion: When people with impaired health and workability are pressed by both rising work demands and stricter eligibility citeria for disability benefits they are forced into a life with temporary means tested or no benefits.

*How to keep the elderly in the workforce*

The economic and political sustainability of the Nordic welfare states depends on a high employment rate. This is challenged by demographics with an ageing population, but also – starting 5 decades ago 1,2 – by a tendency among the older workforce to leave the labor market due to ill health, declining demands for unskilled workers3–5 and reforms in Denmark and Sweden that granted access to early exit from the labour market6,7.

Denmark and Sweden share many policy characteristics of universality and emphasis on social investments including active labor market policies. However, employment policies in the two countries relating to the elderly workforce have been quite different resulting in a higher employment rate in Sweden compared to Denmark (Table 1). In the 1970s and early 1980s, policies designed to make it easier for older workers to leave employment early became widely popular, particularly, in Denmark. However, a political process to reverse the reforms and keep older people in the workforce soon began. From the late 1980s a tendency to reduce generousity of sickness-, disability- and unemployment benefits was observed in many OECD-countries including Denmark and Sweden8 . However, both countries have also implemented other policies to keep people in employment by improving work environments, creating subsidized jobs with more flexible demands (flexjobs), and efforts to increase effectiveness of medical and vocational rehabilitation8–10. In general, the Scandinavian approach to keep up employment rates has delivered positive results compared to many other countries11,12. In the age group 25-54 the employment rate has been as high as 85% for both men and women. In comparison, the age group 55-64 has a significantly lower employment rate though it has been increasing since 2000 (Table 1).

--- insert Table 1 ----

*Main disability reforms since 2000*

Denmark and Sweden have both introduced restrictions on eligibility criteria to disability benefits in recent decades. These restrictions are part of a larger trend of political reforms intended to keep people with health problems on the labour market. In 2013 Denmark tightened the medical criteria for disability pension. Permanent disability benefits are only granted for people with so little workability that they cannot comply with a normal job or a flexjob. If there is any prospect of improved workability after further treatment or rehabilitation they will have to take part in mandatory vocational rehabilitation. At the same time the subsidized flexjob scheme was expanded to include people with a workability down to as little as a few hours per week13,14. A previous reform of the disability benefits in 2003 had focused on creating incentives to remain in employment. However, the lack of expected effects on attachment to the labour market lead to the restrictions on eligibility criteria in 2013. In 2014, a reform of the sickness insurance benefits was introduced where assessment of the workability was advanced from after one year to five months of benefits. Claimants evaluated to be at risk of further sickness absence are offered a vocational rehabilitation program15.

In Sweden, similar changes started already in the 1990s after a strong increase in spending on sickness and disability benefits in the 1980s to levels twice as high as in Denmark. Eligibility criteria for disability pension were limited to only medical criteria without any consideration of local labour market conditions9. In 2003, the disability benefits became part of the sickness insurance to create a coherent insurance that would encompass all types of replacement income due to reduced workability. Several organizational efforts have also been introduced to ensure a more strict and efficient practice. In 2005, the assessment of disability benefit claimants was centralized to a single governmental agency with the intention to ensure a uniform treatment of citizens as regional variations in sickleave and disability benefits – that could not be explained by differences in health had been observed. The changes in 2005 were thus more in implemetation than actual change of legislation 16. In 2008, the eligibility criteria for disability benefits were tightened further. Previously, disability benefits had been granted on a temporary or permanent basis, but from 2008 only people with permanently reduced workability would be eligible. The reform also introduced “rehabilitation chain”, with repeated assessments of workability at fixed time intervals. Further the reform limited the benefit period to one year. Benefit levels have gradually been lowered in both countries15 and overall policies have moved from a focus on economic security and vocational rehabilitation to a focus on economic incentives to work16 and stricter eligibility criteria for disability benefits.

*Reforms in a labour market context*

The implementation of the political initiatives described above has taken place in a context with increasing demands on the labour market. Though the changes in self-reported physical and psychosocial demands have been surprisingly small according to *Eurofound*-data for the period 2005-2015, rising mental demands have been observed in public services like health and education17. These findings have been partly confirmed by national surveys in Denmark and Sweden18,19. In Sweden, it has been found that job strain (high mental demands combined with low decision latitude) has increased in the workforce in general over the period and, especially, among women. This is partly a consequence of service sector expansion, but most of the rise in strain has taken place within job categories, primarily in welfare services such as care and education19.

Taken together, the context described above shows that people with health problems and functional limitations could be facing a *pincer movement* where they on the one hand are facing high and in some branches rising work demands which might make people with small or moderate health limitations unable to cope. At the same time criteria for disability benefits are tightened. In particular people with mental problems might be vulnerable since the psychological and social demands at work are rising in some sectors, and at the same time stricter medical criteria for disability pension may hit those with mental symptoms where diagnostic criteria are less clear20.

A systematic review of changes to eligbility criteria for disability related benefits covering Norway, Sweden, the UK and Canada found that such changes generally shifted people onto other benefit schemes such as unemployment benefits and did not lead to more people entering employment21. A recent Danish study showed that people on temporary means tested welfare benefits have experienced a rise in the prevalence of common mental disorders20. Similar findings have been made in Sweden22. Further analysis indicates that this was generated both by an increase of people with mental problems leaving the labour market, and by an increase in people with health problems moving into means tested welfare benefits20, potentially because they were not sick enough to qualify for a disability pension.

Studies from the UK found that reassessment of existing disability claimants against tighter criteria for disability benefits did not increase employment chances of people with a longstanding illness outside the labour market23.

In this study, we therefore aim to analyse how the employment situation changes for people with different levels of health problems in the context of recent disability reforms. We hypothesise that when eligibility criteria are tightened or enforced more strictly those with moderate health problems are pushed into means tested and temporary benefits, while the employment of those in good health will not be affected and those with severe health problems will still qualify for disability benefits.

**Material and methods**

*Data*

The study is based on repeated cross-sectional data from the Survey of Health, Ageing and Retirement in Europe (SHARE)24. SHARE is a biannual survey that on a random sample collects data on health, socio-economic variables and social networks in individuals above 50 years and their partners. Data collection for SHARE began in 2004 and over the years 28 countries have participated in the survey. In this study we made use of data collected in Denmark and Sweden in 2004-2015 with waves 1, 2, 4, 5 and 625–29. Individuals were selected if they were between 50-59 years at the time of the interview in order to avoid influence by early retirement reforms applying to those older than 60 years. The total sample consists of 5,384 observations of individuals 50-59 years of age from Denmark or Sweden, who have participated in one or more of the selected waves. The sample consisted of 3,242 individuals who contributed with one observation (48.9%), two observations (36.2%) or three observations (15.0%). Out of the total sample 29 individuals had missing data on the outcome variable, which reduced the sample for the regression analysis to 5,355 observations.

*Health score*

We constructed a health score based on three variables assessing health and functional limitations. The included variables cover mental health status, pain and functional limitations. As mental health conditions and musculoskeletal pain are some of the most important drivers of disability benefits in Denmark and Sweden we wanted to apply a score that included these conditions in addition to the measure of functional limitations.

Mental health status was based on Euro-D scale, which was developed to compare symptoms of depression across European countries. The scale covers the following 12 symptoms: depression, pessimism, suicidality, guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment, tearfulness30,31. We categorized responses in three levels: 0-1 symptoms, 2-3 symptoms and 4 or more symptoms.

Functional limitations was measured by use of the Global Activity Limitations Index (GALI). The question for GALI asks ‘*For the past six months at least, to what extent have you been limited because of a health problem in activities people usually do*’. The three response categories were no limitations, limited but not severely and severely limited.

The pain variable was adjusted to changes in the questionnaire between waves. In wave 1-4 (used for the Swedish data), the pain variable was constructed by a combination of a question on back and joint pains and questions on the use of pain medication. (either use of medication for joint pain or other pain). The pain variable was classified in three levels: the respondents that answered no to the question on joint pain were classified as having no pain, if respondents answered yes to the question on joint pain, but no the question on whether they use pain medication they were classified as having moderate pain, whereas if respondents answered yes to both experiencing joint pain and using pain medication they were classified as having severe pain. In wave 4-6 (the Danish data), the pain variable was harmonized across the waves. In wave 4 the pain question was based on the pain discomfort domain of the EQ-5D with three levels and in waves 5 and 6 on pain to three levels with no, mild or moderate and severe degree.

Our health score combines the three items on mental symptoms, disability and pain and was finally categorized into three levels good health, moderate health problems, and severe health problems.

*Timing of the implementation of reforms*

The implementation of the disability reforms mainly took mainly place after 2005 and 2008 in Sweden and after 2013 in Denmark and, therefore, our before-after comparisons involves different calendar periods in the two countries. Sweden has a rather small sample (200-1000 per year) with insufficient statistical power to be analyzed separately, and since the reforms in the two countries are very similar, we have collapsed the data for both countries into three periods: the first time period includes data *before* the recent reforms (SHARE wave 1 (2004) in Sweden and wave 4 (2011) in Denmark), the second time period includes data from around the *early* *stages of implementation* of the reforms (wave 2 (2007) in Sweden and wave 5 (2013) in Denmark), whereas the third period includes data from *later stages* of implementation of the reforms were implemented (wave 4 (2011) in Sweden and wave 6 (2015) in Denmark).

***Outcome measure: Employment status***

Data on employment was collected with a question on the interviewed individual’s current job situation. The response categories covered retired, employed or self-employed (presumably including people on sickleave or flexjobs), unemployed, permanently sick or disabled, home maker, or other. We classified the responses in three groups: the individuals that answered that they were ‘employed’ or ‘self-employed’ were classified as being *employed*, individuals that reported they were ‘retired’ or ‘permanently sick or disabled’ were classified in the group *disability benefits*, and individuals that stated they were ‘unemployed’, ‘home maker’ or ‘other’ were classified as being on *other or no benefits*.

***Statistical analysis***

The analysis was carried out in SAS v. 9.4 and based on multinomial logistic regression in proc logistic. Three outcome levels are used: employed (reference), temporary/no benefit and disability pension. The health score, time period and the covariates age, gender and country were all included in the model as categorical variables. An interaction term between time period and health score was included in the model to assess our hypothesis as departure from multiplicativity. Age, gender and country were included in the model as confounders.

**Results**

Figure 1 shows the rate of newly granted disability benefits per 1000 people in Denmark and Sweden 2004-2016. The graphs show a marked drop in newly granted disability benefits in both Denmark and Sweden, but the drop happens markedly earlier in Sweden than in Denmark in line with the timing of the reforms in the two countries.

----- insert Figure 1 ------

Just over half of the individuals in our sample were women (55.9%). In our sample 60.2% had good health, 28.7% had moderate health problems and 11.2% had severe health problems. The majority was employed (83.7%), whereas 6.6% were on temporary or no benefits, and 9.7% on disability benefits (data not shown). Table 2 shows numbers and proportions in the different employment and benefit categories across years and health scores. It does not include data from wave 1 and 2 in Denmark and 5 and 6 in Sweden as they are not used in the analysis. Not all years are included for both countries since the pain-component of the health variable is not comparable for some years , and those years are not needed for the analysis. In 2011, which is the only overlapping year, the employment rates were higher in Sweden than in Denmark across all levels of health status, but markedly higher for people with moderate health problems (87.1% in Sweden compared to 78.9% in Denmark) and with severe health problems (52.8% in Sweden compared to 42.6% in Denmark).

--- insert Table 2 ---

--- insert Table 3 ---

Table 3 shows the odds ratio of being on *temporary or no benefits* or on *disability benefits* over time compared to the reference group who is employed and in good health before the implementation of the disability reforms. The odds ratio for being on temporary or no benefits decreases for those in good health, which corresponds to the overall increase in employment found in table 1. For those with moderate health problems the OR increases from 1.25 (0.81-1.90) before the reforms to 2.05 (95%CI: 1.41-2.98) in the early phases of implementation and 1.73 (1.14-2.61) in the following years. For those with severe health problems we also see an increase in odds ratio for being on temporary or no benefits. The odds ratio for being on more permanent disability benefits declines to approximately half the level after reforms among those in good health, and even declines from 5.93 (3.77-9.31) to 3.83 (2.30-6.38) for those with moderate health problems. For those with more severe health problems there was no change. Overall, the development over time of employment versus benefits differs between the health levels and the interaction between timing of the reforms and health is statistically significant (p<0.001).

**Discussion**

In summary, our analysis shows that for the large group in good health (60%), the odds of receiving disability benefit or being out of work with no or temporary benefit is considerably reduced after the reforms and the employment rates correspondingly increased. For the 29% with moderate health problems our hypothesis was that – squeezed between increasing job-demands and stricter eligibility criteria – they would have an increased risk of ending up with temporary or no benefits. That hypothesis is supported by the analysis. For the 11% with more severe health problems the chance of getting a permanent disability benefit is relatively unchanged, but the risk of ending up without any or some temporary benefit is increased after the reforms.

The fact that more people with small or temporary health problems are working might be an effect of many ongoing secular trends and labour market policies including the disability reforms. That development lies behind the overall increasing employment rates shown in Table 1. The fact that not only the groups with moderate health problems, but also the group with severe health problems increasingly are on no or temporary benefits is a sign of the pervasiveness of the disability reforms. They have pushed people with both moderate and severe health problems into a life exposed to the economic stress living with no or temporary and means-tested benefits.

The policy implication is that this type disability reforms may have contributed to keep some people with small or temporary health problems at work. People with health problems, who have difficulties to comply with demands of modern labour markets have been pushed out to temporary or no benefits. For them jobs with reduced and more flexible work demands (flexjobs) are more important than ever, if they shall not be pushed out into economic adversities that might further aggravate their health problems.

The study is based on SHARE data of well known quality, comparable across waves and countries. One limitation of the study is that we were not able to account for the dependency between observations for individuals participating in more than one wave in the multinomial logistic regression models. However, the effect of repeated measurements was tested in a simpler model with a binary outcome and that only had marginal effect on the OR estimates and the overall pattern was similar in the two models (data not shown). Another limitation of the study is that we make use of a health score which is not validated to be able to include the dimensions on mental health and pain. However, we have carried out a sensitivity analysis based on the GALI, which is a more simple disability measure than the one we applied in our analysis. The analysis based on GALI showed a very similar pattern as the health score in our study (data not shown). Another limitation was the small sample size in Sweden which implied that we were not able to carry out the analysis separately for the two countries, but had to merge the samples across different measurement years. The employment rates found in the SHARE sample are generally higher than what is found the OECD data in table 1. That could indicate a selection bias with more non-responders among the not employed32. The differences between Denmark and Sweden are similar to OECD data but the time trends indicate that this selection bias might increase over time.

**What is already known on this subject**

Labour market reforms including stricter eligibility criteria for disability pensions have aimed at and succeeded to increase employment rates among the elderly labour force. At the same time productivity and work demands has increased to an extent that might make it difficult for people with reduced health to comply.

**What this study adds**

The combined effect of labour market policies including stricter eligibility criteria for permanent disability benefits and higher work demands has increased the employment rate among the healthy 60%, while the 40% with moderate and severe health problems are pushed into temporary means tested or no benefits.

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**Ethics approval** The SHARE project is submitted to continuous ethics reviews. From wave 4 and onwards SHARE has received ethical approval from the Ethics Council of the Max Planck Society. The last ethics approval was granted on 4 March 2016 (<http://www.share-project.org/organisation/dates-facts.html>).

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