

Employment Status and Inequalities in Self-Reported Health

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ABSTRACT

BACKGROUND: The aim of this study was to investigate the impact of employment status on self-reported health in Gävleborg County.

METHODS: The study used data from the 2010 Health in Equal terms survey, a cross-sectional survey carried out in Gävleborg County in Sweden. A total of 4,245 individuals, aged 16–65 years were included in the analyses. Descriptive and logistic regression analyses were used to assess the relationship between employment status and self-reported health

RESULTS: Individuals outside the labour market had odds of poor health of 2.64 (CI 2.28–3.05) compared to their employed counterparts. Controlling for other covariates reduced the risk slightly to 2.10 (1.69–2.60), but remained statistically significant. In addition, other variables were associated with self-reported poor health.

CONCLUSIONS: This study found a statistically significant association between being outside the labour market and poor self-reported health. The relation was explained partially by socio-economic and demographic variables. More studies, in particular longitudinal, are needed to further investigate the observed relationships. Policy-makers within the Gävleborg County need to pay attention to the health status of those out of work, especially during times of combined economic and labour market fluctuations.

Results of the study suggest the need to pay attention to the health status of those outside the labour market, especially during times of economic hardship.

Key words: Employment status, self-reported health, health inequalities

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INTRODUCTION

Reducing inequalities in health, morbidity and mortality are important issues for local

authorities and national governments worldwide [1-3]. Research on the social determinants of health has shown the impact of employment status on health outcomes and its importance in

the aetiology of chronic disease [4-10]. Studies carried out in various industrialized countries have revealed that there is a relationship between unemployment and an increased risk of morbidity and mortality [7-9,11-13].

Long-term illness, worse subjective physical health and reduced well-being have been proven to be more common among unemployed, compared with employed persons [9,14]. A longitudinal study from Sweden has provided strong evidence that prolonged unemployment causes deterioration of physical health [8]. Symptoms of mental illness have also been found to be more pronounced among the unemployed than among those who are employed [15]. Moreover, mental health seems to be, at least partly, mediated through poverty and financial anxiety [11].

In recent years much attention has been paid to the role that employment status plays as a source of health inequalities. This is due to the fact that far less research has been conducted on health inequalities than on other measures of socio-economic position such as income and education [3,16-18].

During the past decade, Europe including Sweden has been characterized both by a rise in unemployment and in precarious forms of employment, which affects population health and health inequalities not only as a consequence of poor working conditions, but also regarding conditions and status of employment [1,19-21].

The health effects of different types of employment should be seen in an historical perspective, where changes in employment status have been affected by a greater influence of powerful corporations and altered economic policy. In developed countries, this has resulted in fewer jobs, an increase in precarious employment and a reduction in welfare for the unemployed and disadvantaged [19,21-23]. Thus, the social context, labour market policies, power relations in the labour market and welfare, contribute to shape the size and consequences of job insecurity [4]. Moreover, according to Benach et al., workers with more equal labour institutions and welfare such as in Sweden could have more favourable conditions contrasted to other countries (e.g. USA) with more unequal institutions and many developing countries with more informal markets [4].

Self-reported health has been linked to employment status [24-26]. It is a predictor

of future health and use of health services [27,28] and includes biological, psychological and social dimensions [29]. In addition, the overall reliability of self-reported health as such predictor has been found to be good [30].

Studies from various countries and a variety of contexts have found that unemployed individuals rate their health as being poorer than those employed [24-26,31,32]. For instance, a study carried out in 23 European countries showed differences between welfare state regimes, with unemployment having a strong negative effect on health for women in Anglo-Saxon and Scandinavian regimes [31]. Furthermore, high unemployment in an area has been shown to be related to a poorer self-reported health [33] as well as living in households where at least one person is unemployed or with uncertain employment, which is also related to poorer self-reported health [34].

Other studies carried out after plant closures have indicated that self-reported job insecurity can have a significant negative effect on self-reported physical and mental health [35].

Similarly, Swedish studies have reported a relationship between employment status and self-reported health [36,37]. For instance, a study with a sample of men and women aged 18-79 years showed that both unemployment and concerns over losing one's job were found to be associated with poor self-reported health. Economic hardship explained a part of the association among the unemployed [36].

In recent years the County of Gävleborg (Sweden) has experienced an increase in flexible forms of employment, factory closures and layoffs above the national average, with high unemployment rate as result [38]. In addition, post-secondary education has on average been about 6% lower than national average for several years with 10% lower for men and 7% for women in 2012 [39]. Other aspects of health characteristic of Gävleborg are: life expectancy is among the lowest in the country, heart attacks are more common within the county than in most other counties and in Sweden generally [39]. In addition, Gävleborg stands out when compared with the national average with a higher proportion of overweight and obesity, lower physical activity among women and a higher proportion who do not consume enough fruit and vegetables [39].

The recent economic downturn further

increased unemployment in Gävleborg, and most likely affecting the already complex picture of health among the county's residents.

However, no study has previously examined the health impact of the massive job layoffs as well as economic hardship among people living in the county. Therefore, this study aims to fill gaps in knowledge by investigating the impact of employment status on self-reported health in the County in 2010, at the pick of the recent economic recession.

METHODS

Study setting

The county of Gävleborg is located in the eastern part of central Sweden and the current population is estimated to be approximately 280,000 inhabitants. The county has ten municipalities spread over two areas. The administrative centre of the county is the municipality of Gävle, and also the county's largest city with around 95,000 inhabitants. The unemployment rate in Gävleborg 2010 at the time of the survey was 9.8 % of the population aged 16-64. The national average at the same time was 6.9 % [38]. In November 2013, the unemployment rate in the county was still at a high level, 9.4 % of the population and 11.5 % of the labour force (in total 15,781 individuals). The national average was at that time 6.7 % and 8.5 % respectively [40]. Moreover, the number of redundancy notices more than doubled (+170 %) within the county in November compared with October 2013. Compared to the same time in 2012, the number of redundancy notices has increased by 35 % [41].

Study sample and design

The study data come from the latest cross-sectional national survey, Health on Equal Terms (HET) carried out in Gävleborg County in 2010. The sample selection was carried out by Statistics Sweden. The selection, based on the Total Population Register (TPR) consists of all registered residents within the county between the ages 16-84, in total 221,618 individuals. A municipality-based, stratified, random sample of 12,000 individuals for Gävleborg, including the ordinary national sample, divided into

1,000 individuals per municipality and 600 individuals per site in the municipality of Gävle were selected. Before the questionnaire was sent out, a final check found that 23 individuals turned out to no longer belong to population, resulting in a final sample size of 11,977 individuals. Overall 5,983 persons completed the questionnaire, giving a response rate of fifty per cent. However, for this study only those of working age 16-65 years were included in the analyses, in total 4,245 individuals.

Survey procedure

The survey was a co-operation between the Swedish National Institute of Public Health and Gävleborg County Council. It was conducted as a postal survey in combination with a web survey by Statistics Sweden between March and June 2010. The subjects had the opportunity to choose if they wanted to answer the questionnaire on paper or on the web. Along with the questionnaire, an information letter was sent to the selected individuals in order to outline the study background and objectives, how the answers would be used and that additional data would be retrieved from the TPR (for variables such as education, income and taxation). The letter also emphasized the confidentiality of the survey and included information about who to contact if they had any questions. The questionnaire contained questions about health, lifestyle, economic conditions, labour and employment as well as security and social relationships. Demographic data were collected from the TPR, education register as well as income and taxation registers.

Measurement of Variables

In this study the outcome variable was self-reported health. *Self-reported health* (SRH) was assessed using the following question, "How would you rate your general health?" and there were five possible answers ('very good', 'good', 'fairly', 'bad' and 'very bad'). For this study, the answers were dichotomized. Those who answered 'very good' or 'good' were regarded as having good health and those who answered 'fairly', 'bad' or 'very bad' were regarded as having poor health

Main independent variable

The main independent variable in this study is *employment status*. In the survey, employment status was assessed by using one question: "What is your current main job?" The answers were dichotomized into two categories, 'employed' and 'not employed'.

Other independent variables (control variables).

Demographic and socio-economic variables such as age, sex, marital status, education and income as well as social support, smoking habits, risk consumption of alcohol, physical activity and long standing illness were used as control variables.

Five *age groups* were created for this study, 16-25, 26-35, 36-45, 46-55 and 56-65 years of age respectively.

Marital status was defined in terms of three groups: being married (or living with a partner), single (including divorced partner) or widow/widowed.

Education was assessed by using Statistics Sweden's educational register from 2009. The classification is made for the person's highest level of education according to Swedish educational nomenclature (SUN) 2000 [42]. For the current study, three levels of education were created: primary school or similar; secondary school/similar and university/similar.

Income was retrieved from income and taxation registers (relates to 2008) as total individual annual gross income. Three groups were created: a) low-income < 250 thousand SEK, b) medium-income 250 -750 thousand SEK and c) high income, > 750 thousand SEK a year.

Social support was measured with the question: "Do you have someone you can share your deepest feelings with and confide in?" There were two possible answers that divide those with social support ('yes') from those without social support ('no').

Smoking habits were assessed by following questions a)"Do you smoke daily?" b) "Do you ever smoke occasionally" and c) "Have you previously smoked daily for at least six months?" Each of the questions could be answered with 'Yes' and 'No'. For this study, smoking habits were divided in those who smoked ('yes') and those who didn't smoke ('no').

Risk consumption of alcohol was assessed by three questions a) "How often have you drunk alcohol in the past 12 months"? b) "How many "glasses" (example was given) do you drink on a typical day when you drink alcohol?" c)"How often do you drink six "glasses" or more on the same occasion"? A new composite variable was used for this study and was categorized as 'Yes' (risk consumption) and 'No' (no risk consumption).

Physical activity was measured using the question: "How much have you moved and exerted yourself physically in your spare time during the past 12 months?" The answers were divided into three categories; 'low', 'moderate' or 'vigorous' physical activity.

Long standing illnesses were measured using the question: "Do you have long standing illness, health problems or similar?" The answer was dichotomised in 'Yes' or 'No' format.

Statistical Analyses

Descriptive and logistic regression analyses were performed. The logistic regression was used to assess the relationship between employment status and self-reported health (SRH), and was performed using two models. Model I analysed the relationship between employment status and SRH only. Model II added the potential confounder's age, sex, marital status, education and income, social support, smoking habits, risk consumption of alcohol, physical activity and long standing illnesses. Results are presented as OR with 95% confidence intervals. All analyses were performed using SPSS 20 [43].

RESULTS

The distribution of the sample can be seen in Table 1. Results show that as many as 26.7 % of males and 30.2 % of females considered their health as not good. Regarding employment status, 42 % of those who were not employed declared their health as not good compared to 21.6 % of those employed. In addition, the results revealed that twice as many (36.5 %) in the oldest age group (aged 56-65) reported their health as not good, compared with 18.3 % in the youngest age group (aged 16 -25). In relation to income, 32.5 % of those with the

TABLE 1

| DISTRIBUTION OF SELF-REPORTED HEALTH ACROSS VARIABLES, GÄVLEBORG, HEALTH IN EQUAL TERMS SURVEY, 2010 (N=4245) | | | | |
|---|----------|---------|----------|---------|
| VARIABLE | POOR SRH | | GOOD SRH | |
| | N | PERCENT | N | PERCENT |
| EMPLOYMENT STATUS | | | | |
| Employed | 498 | 21.6 | 1812 | 78.4 |
| Not employed | 575 | 42.0 | 793 | 58.0 |
| SEX | | | | |
| Male | 504 | 26.7 | 1383 | 73.3 |
| Female | 690 | 30.2 | 1592 | 69.8 |
| AGE | | | | |
| 16-25 | 103 | 18.3 | 461 | 81.7 |
| 26-35 | 108 | 22.4 | 375 | 77.6 |
| 36-45 | 195 | 24.3 | 607 | 75.7 |
| 46-55 | 310 | 30.6 | 702 | 69.4 |
| 56-65 | 478 | 36.5 | 830 | 63.5 |
| MARITAL STATUS | | | | |
| Married | 492 | 27.7 | 1284 | 72.3 |
| Single | 670 | 28.7 | 1662 | 71.3 |
| Widow/widowed | 32 | 52.5 | 29 | 47.5 |
| EDUCATIONAL LEVEL | | | | |
| Primary school or similar | 282 | 32.9 | 574 | 67.1 |
| Secondary school or similar | 693 | 30.5 | 1582 | 69.5 |
| University/similar | 213 | 21.5 | 777 | 78.5 |
| TOTAL INCOME | | | | |
| Low <250 thd sek | 290 | 32.5 | 601 | 67.5 |
| Medium 250-750 thd sek | 638 | 31.9 | 1362 | 68.1 |
| High >750 thd sek | 261 | 20.7 | 1000 | 79.3 |
| SOCIAL SUPPORT | | | | |
| Yes | 949 | 26.0 | 2703 | 74.0 |
| No | 226 | 49.6 | 230 | 50.4 |
| SMOKING HABITS | | | | |
| Yes | 241 | 34.4 | 459 | 65.6 |
| No | 855 | 27.7 | 2231 | 72.3 |
| RISK CONSUMPTION OF ALCOHOL | | | | |
| Yes | 224 | 31.2 | 495 | 68.8 |
| No | 959 | 28.1 | 2453 | 71.9 |
| LEVEL OF PHYSICAL ACTIVITY | | | | |
| Low physical activity | 279 | 50.6 | 272 | 49.4 |
| Moderate physical activity | 793 | 28.3 | 2006 | 71.7 |
| Vigorous physical activity | 103 | 13.3 | 673 | 86.7 |
| LONG TERM ILLNESSES | | | | |
| Yes | 838 | 53.9 | 717 | 46.1 |
| No | 350 | 13.5 | 2241 | 86.5 |

lowest incomes (<250 tSEK) considered their health as not good, whereas the corresponding figure for those with highest incomes (>750 tSEK) was 20.7 %. In terms of lifestyle, physical activity seemed to contribute to a better well-being. Of those who exercise vigorously 13.3 % self-reported their health as poor, compared to 50.6 % of those who exercised somewhat.

In the bivariate analysis (Model I), people who were not working showed increased odds for poor self-reported health. People who were not employed had odds of 2.64 (CI 2.28–3.05). Controlling for other variables (sex, age, marital status, education, income, social support smoking habits, risk consumption of alcohol, physical activity and long standing illness) in the multivariate analysis reduced the statistical significance of poor self-reported health marginally from 2.64 (CI 2.28–3.05) to 2.10 (CI 1.69–2.60) (see Table 2).

In Model II, age, income and long standing illness were associated with poor self-reported health. For instance, those with low income (< 250 tSEK) had odds of 1.89 (CI 1.31–2.70) of rating their health as poor compared to those with high income (see Table 2). Furthermore, persons with no social support had odds of 2.22 (CI 1.70 - 2.91) compared with those who had this support. In regard to physical activity, individuals with low level of activity were more than 5 times (OR 5.98, CI 4.25–8.42) more likely to rate their health as poor compared to those vigorously active (see Table 2).

DISCUSSION

This study found differences in self-reported health by employment status among residents of Gävleborg County aged 16–65 years. Others studies have reported a similar relationship [31,36,44,45]. For instance, Moralius and colleagues found that employment status had a strong association with self-reported health, unlike educational level which had a weaker association. In addition, economic hardship seemed to explain some of the association but the odds ratios remained highly significant [36]. In the study, low income was associated with poor self-reported health. Kaleta and co-authors found that self-reported health was associated with employment status for both men and women in Poland. The study also showed that among unemployed persons, the risk of poor

health assessment was over three times higher for men and one and a half times higher for women compared to employed persons of the same sex [25].

However, other studies have reported different results regarding the relationship between employment status and self-reported health. For instance, in a European study, Böckerman and Ilmakunnas found that the event of becoming unemployed did not matter for self-assessed health. Instead, according to the authors, the unemployed had a lower health status already before they became unemployed compared to those continually employed [46].

Controlling for other variables in Model II slightly reduced the odds ratio from 2.64 (2.28–3.05) to 2.10 (1.69–2.60) although still statistically significant. A similar finding was reported by a study carried out in Northern Sweden where the risk of poor self-reported health among the unemployed persisted when unemployment levels were high compared to periods of low unemployment even after adjusting for socio-demographic variables [47]. This finding might mean that other factors could explain the excess of poor health reported by those unemployed. In this study, the unemployed group included people with early retirement, retirees and others outside the labour market. Several studies have found that people with illness and disabilities tend to report very poor health [27,29,48]. Long standing illness was associated with poor self-reported health also in our study.

The data for this study were collected during a period of high unemployment within the county caused by the economic crisis, which started in 2008. The unemployment rate among adults 16–64 years of age increased dramatically from 7.2% in 2008 to 12% of the labour force in 2010 (national average increased from 5% to 8.7% for the same period). The youth unemployment rate in the county (18–24 years of age) increased at the same time from 17.2 to 27.3% [49].

Several researchers have argued that the relationship between employment status and health is a complex one. The debate continues as to whether unemployment causes poor health or poor health causes unemployment [32,44]. It is suggested that there are probably several mediators and confounders, which may be social, economic and clinical [50]. For self-reported general health there is support for health selection, but also causation [51]. For

TABLE 2

ODDS RATIOS (OR) AND 95% CONFIDENCE INTERVALS (CI) OF THE RELATIONSHIP BETWEEN EMPLOYMENT STATUS AND POOR SELF-REPORTED HEALTH, GÄVLEBORG HEALTH IN EQUAL TERMS SURVEY, GÄVLEBORG COUNTY 2010

| VARIABLE | MODEL I OR WITH 95% CI | MODEL II OR WITH 95% CI |
|------------------------------------|---------------------------|----------------------------|
| EMPLOYMENT STATUS | | |
| Employed | Reference | Reference |
| Not employed | 2.64 (2.28-3.05) | 2.10 (1.69-2.60) |
| SEX | | |
| Male | | Reference |
| Female | | 1.17 (0.96-1.42) |
| AGE GROUP | | |
| 16-25 | | Reference |
| 26-35 | | 1.77 (1.15-2.71) |
| 36-45 | | 2.50 (1.64-3.82) |
| 46-55 | | 3.25 (2.15-4.92) |
| 56-65 | | 3.00 (2.01-4.49) |
| MARITAL STATUS | | |
| Married | | Reference |
| Single | | 1.03 (0.84-1.26) |
| Widow/Widowed | | 2.05 (1.06-3.98) |
| EDUCATIONAL LEVEL | | |
| Primary school or similar | | 1.31 (0.96-1.79) |
| Secondary school or similar | | 1.36 (1.08-1.72) |
| University/similar | | Reference |
| TOTAL INCOME | | |
| Low income < 250 Thd Sek | | 1.89 (1.32-2.70) |
| Medium income 250 – 750 Thd Sek | | 1.32 (1.05-1.66) |
| High income > 750 Thd Sek | | Reference |
| SOCIAL SUPPORT | | |
| Yes | | Reference |
| No | | 2.22 (1.70-2.91) |
| SMOKING HABITS | | |
| Yes | | 1.01 (0.80-1.27) |
| No | | Reference |
| RISK CONSUMPTION OF ALCOHOL | | |
| Yes | | 1.54 (1.22-1.95) |
| No | | Reference |
| PHYSICAL ACTIVITY | | |
| Low physical activity | | 5.98 (4.25-8.42) |
| Moderate physical activity | | 2.19 (1.67-2.89) |
| Vigorous physical activity | | Reference |
| LONG STANDING ILLNESSES | | |
| Yes | | 6.12 (5.08-7.36) |
| No | | Reference |

instance, the relationship may go from poor health to unemployment to low socio-economic position, in other words by health selection. On the other hand, self-reported health could be affected by employment status directly or indirectly, most likely through either poverty or differences in income [52].

Due to the cross-sectional nature of our study, it is not possible to make any assumptions

about health selection. However, the excess risk observed for poor health among the unemployed remained despite adjustment for other covariates. Some authors argue that when unemployment is high, those unemployed might be a more heterogeneous and healthier group consisting of well-educated white collar workers, with many who experience unemployment for the first time [11,12]. In

addition, the social structure experienced during unemployment itself, rather than selection may affect health status among the unemployed. Others state that the relationship between unemployment and ill health can also be explained by poverty, social exclusion and low social status, which are all experienced by those unemployed or long-term inactive [11].

The potential link between employment status and health inequalities has been considered to be determined by income, working conditions and health outcomes through psychosocial factors, health-related behaviours and physiological and pathological changes [50,53,54]. Using data on self-reported health from the 2001 English Census, Popham & Bambra found that unemployed people or those economically inactive had worse health than those employed, regardless of socio-economic position. Unemployment and economic inactivity contributed to the excess in self-reported poor health, with up to 81 % among the lowest socio-economic groups [52]. Another study, which used a nationally representative U.S. sample showed that a given level of self-reported health may not translate into the same objective health for different socio-economic groups [55].

Researchers working with theories of how people self-rate their general health suggest that there is a self-cognitive process, where people take into account their individual situation but do so in the wider context in which they live [56]. Thus, assessment of one's health while being economically inactive may differ to when one is in or seeking work.

Regarding other variables included in the analysis, the study found increased odds of 1.77 (1.15-2.71) among persons aged 26-35; of 2.50 (1.64-3.82) among ages 36-45 and of 3.25 (2.15-4.92) among ages 46-55 years compared to the youngest group, 16 -25 years. In addition, low income (<250 tSEK) was associated with poor self-reported health. In many respects, this is similar to Kaleta et al., study of polish men and women. These authors found that low education, low income and current or former smoking were associated with poor self-reported health [25]. Education is known to enhance an individual's job opportunities [11]. Finding a job can improve income, which in turn favourably affects health. According to Stronks et al a relatively strong association between income and health can for a large part be interpreted in terms of an

interrelationship between employment status, income and health [57].

Furthermore, our study observed a very strong relationship between lifestyle variables such as physical activity and risk consumption of alcohol and poor self-reported health. The links between unhealthy habits and poor health are well known [58]. For instance, An and colleagues reported that deteriorating labour market conditions predicted decrease in physical activity in the population, especially among the unemployed [58].

Strengths and limitations

The strengths of the study are that it used well validated instruments. For instance, self-reported health has been found to be a reliable measure of health which considers both somatic health and level of well-being. It also takes into account the influence it has on the person's quality of everyday life [28,29]. Further, the study is based on a large data set, collected at the county level, in a region hard hit by factory closures and a high level of unemployment [38].

However, the study has some limitations. The analyses were based on cross-sectional data, which preclude causality and its direction. In addition, it was not possible to conduct analyses for employment conditions and duration of unemployment. Previous studies have shown that job insecurity can have a similar impact on health as unemployment [59,60].

Another limitation of this study is the non-response rate of fifty per cent, which is in line with decreasing response-rates in population based surveys in Sweden as a whole [61]. It is suggested that in population based surveys, non-respondent groups have a high probability to report poor health [62,63]. However, results of this study are less likely to have been influenced by non-response bias. Statistics Sweden used population weightings to estimate prevalence at the population level. The weightings were performed with help of information from registers of the total population of Gävleborg County. In addition, apart from adjustments for the sample sizes in the different strata, the register data was used for calibration of non-response bias for various groups of individuals [64-66].

CONCLUSION

This study found a statistically significant association between poor self-reported health and being outside the labour market. The association was partially explained by socio-economic and lifestyle variables. Longitudinal

studies are needed to further investigate the observed relationship. Notwithstanding, policy-makers need to pay attention to the health status of those out of work, especially during times of combined economic and labour market fluctuations.

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