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Original Research Article

Gender Differences in Self-Reported Health during Times of Economic Crises: Does Employment Status Matter

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ABSTRACT

Background: Employment status has an impact on health and is a source of health inequalities. But little is known about its impact on the health of people residing in the County of Västernorrland, Sweden. The recent economic recession affected this region in a way which worsened the already existing unemployment rate.
Objective of the study: This study aimed to examine the relationship between employment status, gender and self-reported health in the County of Västernorrland, Sweden in the year 2010.
Setting and Design: The study used data from a cross-sectional "Health on Equal Terms" survey, carried in the County of Västernorrland in 2010. A total of 6,050 women and men aged 16-65 years were included in the analysis. Descriptive statistics and logistic regression analyses were performed, and results were expressed as odds ratio with 95% confidence intervals.
Results: Women and men who were out of work had odds of poor self-reported health of 2.31 (CI 1.94-2.94) and 2.39 (CI 1.96-2.58), respectively. Controlling for other variables reduced the odds of poor health, but the relationship continued to be statistically significant.
Conclusion: Results of this study found that at the pick of the most recent economic crises there were equal odds of poor self-reported health among women and men residing in Gävleborg County. The observed association was to some extent explained by demographic, socioeconomic and health-related variables. Policymakers need to pay attention to the health status of those out of work, particularly during times of economic recession and hardship.

Keywords: *Employment status, self-reported health, gender, Västernorrland County*

INTRODUCTION

Various studies have reported a relationship between employment status and self-rated health in general but also according to gender. [1-6] For instance, a study carried out in southern Sweden found that unemployed men were four times more likely to report poor health than women than

their employed counterparts. [3] Although women's health has improved in the last decades there is still a gap with women reporting worse self-rated health than men in many developed countries including Sweden. [4,5,7,8] The recent economic recession which started in 2008 caused massive job loss and rising unemployment rates across various EU countries. [9] However in Sweden, it was across Counties that the consequences of job loss were mostly pronounced, especially among those with historical and stagnant unemployment rates. [10] For instance, the County of Västernorrland in the Northern Sweden, which is a focus of this study, has experienced high levels of unemployment across all age groups and sexes even before 2008, however, unemployment deteriorated following the economic recession the most recent economic crises due to additional loss of jobs, especially across various types of industries. [10-12]

Elsewhere, there is an ongoing discussion of what role (if any); the recent economic crisis has influenced population health outcomes. [13-18] In Sweden, so far very few studies (and none in Västernorrland County) have investigated this impact, even as many counties were hardly hit by economic downturn. Therefore using data from the 2010 Health in Equal Terms Survey, this study aimed to investigate gender differences in self-reported health by employment status during year 2010 (at the pick of the economic recession). We hypothesize that the economic recession affected equally the health of men and women residing in the county causing an equal burden of self-perceived health.

MATERIALS AND METHODS

Study design and data

The population of this study comes from a cross-sectional study carried out in the County of Västernorrland in 2010 (Health on Equal Terms survey). The sample selection was carried out by Statistics Sweden and the sampling frame was based on the Total Population Register and consisted of all registered residents within the county between the ages of 16-84, in total 221,618 individuals. The selection frame was made using the register of the total population in Sweden which consists of all people between the ages of 16-65 who are registered in the county of Västernorrland. The County sample included a total of 14,300 individuals distributed by geographical areas and age groups, so that the distribution of the sample would be consistent and accurate. The national sample first was drawn by a simple random sample, and then a stratified simple random sample was drawn in the county of Västernorrland. There were a total of 7,547 people who answered the questionnaire which corresponded to a response rate of 51.1%.This study only included a sample of 4950 (2788 women and 2262 men) respondents aged 16-65 years of age.

Survey procedure

The survey was carried out as collaboration between the Swedish National Institute of Public Health, and the Västernorrland County Council, and was conducted as a postal survey in combination with web survey by Statistics Sweden between March and June 2010. Respondents had the possibility to choose if they wanted to answer the questionnaire on paper or on the Web. 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 data would also be retrieved from the Register of total population (for variables such as education, income and taxation). The letter also emphasized the confidentiality of the survey as well as whom they could turn to if there

were any questions regarding the investigation. Respondents of the survey were informed that the survey also could be answered on the web; login details came with mailings, where they could login through Statistics Sweden's website to complete the survey. The questionnaire included background questions, questions about health, lifestyle, economic conditions, labour and employment status as well as security and social relationships. Demographic information was collected from the Register of total population, education registry as well as income and taxation register. For the purposes of this study, only people aged 16-65 were included in the analyses (n=6050).

Ethical approval for the study was given by the National Institute of Health and the Regional Ethical Committee in Umeå.

Measurement of variables

In this study, the outcome variable was *self-reported health.* Self-reported health was assessed using the following question, "How would you rate your general health?" and there were five possible answers (very good, good, and fairly, bad and very bad). For the purpose of this study, the answers were divided with 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 bad health.

Main independent variables

The main independent variables in this study were employment status and gender.

Employment status: In the survey, employment status was assessed by using one question, "what is your current main job?" The answers were divided in two categories, employed and not employed. The employed group included people who reported being employed (in different professions) at the time of the interview. The not employed group included the unemployed, parental leave, students, and those inactive.

Gender was measured as male and female.

Other independent variables

Other variables included age, sex, marital status, smoking habits; risky alcohol consumption, physical activity, long-standing illnesses stress, anxiety, education, income and social support were included in the analysis.

Age was defined using five age groups, 16-25, 26-35, 36-45, 46-55 and 56-65 years, respectively.

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

Smoking habits were assessed by following questions a) Do you smoke daily? b) Does it happen that you smoke every now and then? and c) Have you before 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 into three groups, daily smokers, individuals who stopped smoking and them who never smoked.

Risky 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 by using the question: "How much have you moved and exerted yourself physically in your spare time during the past 12 months?" In this study, the answers were grouped 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.

Anxiety and *Stress*: anxiety/stress was assessed by using the question: "Which statement does best describe your health status today, anxiety/ stress". Possible answers were: I have no anxiety or stress; I have anxiety or stress of some measure". A dichotomous variable was created to distinguish those with anxiety or stress from those without anxiety/stress.

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. For the current study, three levels of education were created: primary school or similar; secondary school/similar and university/similar.

Income was collected from income and taxation register (relates to 2008) as total individual income and 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 by using the question: "Do you have someone you can share your deepest feelings with and confide in"? There were two possible answers: people with social support (yes) and those without social support (no).

Statistical analyses

Descriptive statistics were used to present the sample (see Table 1). Furthermore, bivariate and multivariate weighted logistic regressions were applied to study associations between employment status, gender and self-reported health. Two models of regression analysis were fitted. A bivariate analysis of the relationship between self-reported health and employment status by gender as well as all the other covariates individually was performed in Model I (see Table 2 and 3). After, all the variables were included in a multivariate regression analysis in Model III (see Table 2 and 3), to control for potential confounders of the relationship employment status and self-reported health. Results are presented as OR with 95% confidence intervals. All analyses were performed using SPSS 20. [19]

RESULTS

The distribution of the variables included in the sample is presented is Table 1. In the sample, 28.2%of women and 27% of men reported their health as poor. In addition, 39.9% of women and 31% of men were not employed. Furthermore, 34.6 %of women and 33.9% of men had long standing illness, and 14% of women and 22.3% of men had risky alcohol consumption *(see Table 1)*

Bivariate analysis

In the bivariate analysis, employment status was statistically significantly associated with self-reported health. Compared to their employed counterparts, respondents who were not employed had odds ratios of 2.31 (CI 1.94-2.75) for women and 2.40 (CI 1.96-2.94) among men respectively (see Model I, Table 2 and 3). In addition there was a bivariate association of other variables with self-reported health. For instance, longstanding illnesses, physical activity, education, income, smoking habits, stress and anxiety were associated with poor self-rated health for women and men respectively. However, risky alcohol consumption was statistically associated with poor self-reported health only among men (see Model I Table 3).

Table 1. Sample and percentage distribution of the individual variables included in the analysis by gender. Health in Equal Terms Survey, Västernorrland, 2010

Variable	Total N = 2788 Women		Total N = 2262 Men	
	N	%	N	%
Self-rated Health				
Goodhealth	1968	70.6	1621	71.7
Poorhealth	785	28.2	611	27.0
Missing	35	1.2	30	1.3
Employment status				
Employed	1432	51.4	1230	54.4
Not Employed	1097	39.3	701	31.0
Missing	259	9.3	331	14.6
Demographicvariables				
Age group				
16-25	511	18.3	384	17.0
26-35	474	17.0	311	14.6
36-45	683	24.5	518	22.9
46-55	507	18.2	438	19.4
56-65	613	22.0	591	26.1
Marital status				
Married	1158	41.5	897	39.7
Single	1588	57.0	1352	59.8
Widowed	42	1.5	13	0.5
Socio-economicvariables				
Education				
Primaryschool or similar	420	15.0	461	20.4
secondaryschool/similar	1480	53.1	1366	60.4
university/similar	863	31.0	404	17.9
Missing	25	0.9	31	1.3
Income				
< 25o th SEK	700	25.1	461	20.4
250-750 th SEK	1526	54.7	1366	60.4
>750 th SEK	548	19.7	404	17.9
Missing	14	0.5	31	1.3
Social support				
Yes	2503	89.8	1914	84.6
No	247	8.9	320	14.2
Missing	37	1.3	28	1.2
Health and health behaviour variables				
Self-reported stress				
Yes	1637	50.7	1190	53.1
No	1126	40.4	1150	47.9
Missing	25	0.9	20	1.0
Anxiety				
Yes	1007	36.1	544	24
No	1761	63.2	1689	74.7
Missing	20	0.7	29	1.3
Smoking habits				
Smoking daily	300	10.8	214	9.5
Smoking occasionally	158	5.7	159	7.0
Stopped smoking	582	20.9	472	20.9
Never smokeddaily	1462	52.4	1148	50.8
Missing	286	10.3	268	11.8
Riskyalcoholconsumption				
Yes	384	14.0	504	22.3
No	2376	85.2	1740	76.9
Missing	23	0.8	18	0.8
Physicalactivity				
Lowphysicalactivity	341	12.2	360	15.9
Moderate physicalactivity	1164	41.9	886	39.2
Moderate regularphysicalactivity	653	23.4	532	23.9
Vigorousphysicalactivity	594	21.3	457	20.0
Missing	31	1.2	27	1.0
Long standingillness				
No	1798	64.5	1477	65.3
Yes	965	34.6	767	33.9
Missing	25	0.9	18	0.8

Table 2: Odds ratios (ORs) with 95% confidence intervals (CI) for the relationship between employment status and self-reported health among women. Health in Equal Terms Survey, Västernorrland, 2010

Variable	Model I OR (95% CI)	Model II OR (95% CI)
Employment status		
Employed	Reference	
Not employed	2.31 (1.94-2.75)	2.05 (1.60-2.64)
Demographicvariables		
Age group		
16-25	Reference	Reference
26-35	0.42 (0.32-0.55)	0.36 (0.23-0.56)
36-45	0.54 (0.41-0.70)	0.40 (0.30-0.60)
46-55	0.57 (0.45-0.72)	0.56 (0.40-1.00)
56-65	1.35 (1.10-1.45)	0.90 (0.60-1.35)
Marital status		
Married	Reference	Reference
Single	0.89 (0.75-1.05)	0.91 (0.74-1.17)
Widowed	1.96 (1.06-3.65)	1.39 (0.80-2.15)
Health variables		
Long standingillnesses		
Yes	6.70 (5.58-8.04)	5.96 (4.78-7.48)
No	Reference	Reference
Smoking habits		
Yes	1.06 (1.30-1.99)	0.87 (0.66-1.15)
No	Reference	Reference
Riskyalcoholconsumption		
Yes	1.16 (0.92-1.46)	0.90 (0.80-1.37)
No	Reference	Reference
Physicalactivity		
Lowphysicalactivity	5.15 (3.76-7.05)	4.60 (3.07-6.89)
Moderate physicalactivity	2.45 (1.91-3.14)	2.79 (2.03-3.84)
Vigorousphysicalactivity	Reference	Reference
Self-reported stress		
Yes	3.30 (CI 2.73-4.00)	0.42 (CI 0.33-0.50)
No	Reference	Reference
Anxiety		
Yes	4.84 (CI 4.05-5.77)	3.36 (CI 2.67-4.22)
No	Reference	Reference
Socio-economicvariables		
Education		
Primaryschool or similar	1.64 (1.26-2.14)	1.30 (0.89-1.90)
Secondaryschool/similar	1.60 (1.36-2.02)	1.50 (0.15-1.94)
University/similar	Reference	Reference
Income		
< 25o th SEK	1.58 (1.22-2.46)	1.56 (1.04-2.05)
250-750 th SEK	1.53 (1.26-1.99)	1.33 (0.98-1.81)
>750 th SEK	Reference	Reference
Social support		
Yes	Reference	Reference
No	2.30 (1.76-3.01)	1.82 (1.28-2.57)

Multivariate analysis

In Model II, the relationship between employment status and self-reported health among women and men was adjusted for all variables simultaneously. The odds of poor health among the not employed reduced slightly from 2.31 (CI 1.94-2.75) to 2.05 (CI 1.60-2.64) among women (see Model II, Table 2) and from 2.40 (CI 1.96-2.94) to 2.03 (CI 1.94-2.87) for men (see Model II, Table 3). Furthermore, the odds ratios of poor health for women with long-standing illnesses continued to be statistically significant although have reduced from 6.70 (CI 5.58-8.04) to 5.96 (CI 4.78-7.48) (see Model II, Table 2).In addition, the odds ratios for poor health among men with long standing illnesses continued to be statistical significant but reduced from 3.66 (CI 2.52-5.32) to 3.22 (CI 2.50-4.47) (see Model II,

Table 3). Furthermore, the odds of poor health among male respondents with low education, low income(less than 250 thousand SEK, with stress/anxiety, and no social support reduced while continuing to be statistical significant (see Model II, Table 3).

Table 3: Odds ratios (ORs) with 95% confidence intervals (CI) for the relationship between employment status and self-reported health among men. Health in Equal Terms Survey, Västernorrland, 2010

Variable	Model I OR (95% CI)	Model II OR (95% CI)
Employment status		
Employed	Reference	Reference
Not employed	2.40 (1.96-2.94)	2.03 (1.94-2.87)
Demographicvariables		
Age group		
16-25	Reference	Reference
26-35	0.32 (0.23-0.44)	0.27 (0.15-0.50)
36-45	0.43 (0.31-0.58)	0.40 (0.20-0.47)
46-55	0.52 (0.40-0.68)	0.49 (0.34-1.08)
56-65	0.70 (0.54-0.92)	0.62 (0.43-1.20)
Marital status		
Married	Reference	Reference
Single	0.98 (0.72-1.33)	0.86 (0.72-1.05)
Widowed	1.53 (0.50-4.72)	1.50 (0.53-1.20)
Health and health behaviour variables		
Long standingillnesses		
Yes	3.66 (2.52-5.32)	3.22 (2.50-4.47)
No	Reference	Reference
Smoking habits		
Yes	1.92 (1.30-2.50)	0.75 (0.58-1.28)
No	Reference	Reference
Riskyalcoholconsumption		
Yes	1.42 (1.03-1.96)	1.34 (0.98-1.84)
No	Reference	Reference
Physicalactivity		
Low	6.76 (4.76-9.60)	6.56 (4.32-8.70)
Moderate	2.67 (1.98-3.66)	2.54 (1.81-2.89)
Vigorous	Reference	Reference
Self-reported stress		
Yes	2.28 (CI 1.85-2.81)	1.55 (CI 1.18-2.03)
No	Reference	Reference
Anxiety		
Yes	7.44 (CI 6.00-9.22)	4.45 (CI 3.35-5.91)
No	Reference	Reference
Socio-economicvariables		
Education		
Primaryschool or similar	2.04 (1.49-2.79)	1.80 (1.12-2.60)
Secondaryschool/similar	1.52 (1.16-2.00)	1.43 (0.97-2.10)
University/similar	Reference	Reference
Income		
< 250 th SEK	1.83 (1.48-2.76)	1.74 (1.46- 2.57)
250-750 th SEK	1.04 (0.75-1.42)	0.95 (0.55-1.30)
>750 th SEK	Reference	Reference
Social support		
Yes	Reference	Reference
No	1.92 (1.49-2.46)	1.80 (1.41-2.32)

DISCUSSION

This study found an association between employment, gender and self-rated health during times of economic crisis in Västernorrland County. And the odds of poor health were almost similar among men and women. Other studies have found gender differences in self-reported health among men and women in times of economic stability and with disadvantage towards women. [3-5] A study carried in Sweden reported poor self-reported health

for men and women and the relationship was mediated by economic stress. [3]

Our findings are in line with our hypothesis that in the context of the economic recession men's self-rated health would be equal to that reported by women. But other studies carried out elsewhere in Sweden have found gender differences in self-reported health among unemployed persons with female disadvantage. [4,5,8] Also Reine et al found a strong relationship between unemployment and self-rated health among women as compared to men. [5] However outside Sweden, a study found that the distribution of self-rated health by employment status was uniform for women than men. [20]

It is suggested that the loss of a job affects health due to stress as well as the risk of becoming poor and economically deprived which in turn can mean engaging in risky health behaviours. These factors can lead cumulatively to increased risk of poor self-rated health, cardiovascular ailments, especially among men, depression and suicide as well as mortality. [21-24]

The County of Västernorrland has experienced high levels of unemployment and sick-leave for many years even before the most recent economic recession. However, the situation worsened further after the recent economic downturn with a pick in 2010, the time the data for this study was collected. The unemployment rate in the County rose from 5.9 per cent in 2008 to 9.4 percent in 2010. [25]

Many argue economic recessions and health outcomes can impact health outcomes through two distinct pathways: firstly that unemployment and subsequent loss of savings (possible foreclosures, eviction and unpaid debt). [26,27] These problems could trigger health problems beyond stress, such as suicide, substance abuse as well as deferment of medical care due to loss of income. In our study women and men who were out of work, with low income and stress/anxiety reported poorer health than their employed counterparts. The second suggested pathway in which economic recession can impact health outcomes is through fiscal austerity measures, on health care delivery systems and social safety nets. [26,27] We argue that even if Sweden have one of the most solid welfare systems across industrialized countries, the economic recession still was felt for women and men due to the fact that there was already a social gradient in health across the County. Hence, the financial crises affected economically active people unequally to the disadvantage of people in the lower socioeconomic positions.

Controlling for other variables in Model II (see Table 2 and 3) did not reduce the statistically significant relationship between employment status and self-rated health for women and men. Similarly Reine et al reported that the odds of the relationship between unemployment, gender and self-reported health continued to be strong after controlling for health-related selection, potential mediators and background factors. [5]

Results also found that other variables were associated with self-reported health both in the bivariate and multivariate analysis. For instance long standing illnesses, low physical activity, low income, stress, anxiety and absence of social support were strongly associated with poor health both among women and men. Regarding long-standing illness, similar results have been reported in other contexts. [28]

For physical activity, other studies have reported a positive relationship with self-reported. [29,30] For instance Erikssen and colleagues found that the odds of poor self- reported health was eight and six times higher among physical inactive men and women respectively. [30] Also, Herman and colleagues found that fair and poor self-reported health decreased with light and

strenuous physical activity [29] even irrespective of respondents BMI. [31]

Stress and anxiety were statistically significantly associated with self-reported health among women and men respectively. It is argued that the financial strain caused by job-loss, poverty and reduced individual and household income experienced in times of economic hardship can impact self-reported health. For instance Frank and colleagues found a positive association between financial strain with perceived stress, poor physical health and with symptoms of anxiety and depression. [32]

Also, our results showed an increased risk of poor self-reported health among people with no social support. This finding has been reported by other studies. A study by Demirchyan et al reported that weak social support was one of the strongest independent predictor in the association with self-rated health. [33] Furthermore, risky alcohol consumption was found to be positively associated with poor self-reported health among men. This finding is in line with those of previous studies carried out during the most recent economic recession. [34-36] In Spain, Giliet all reported that physicians treated more mental health and alcohol related problems in patients who were unemployed or had difficulties in paying their mortgages. [35] Also in a research of the effects of unemployment among men, Guilford and colleagues pointed out that they were more likely to engage in health damaging behaviours such as smoking and drinking. [36]

Limitations and strengths of the study

This study was based on cross-sectional survey data which makes difficult to preclude causality as well as its direction. In addition, due to small cell data (and wide confidence intervals) it was not possible to separate the not working group in future groups like students or early retired people. Furthermore, it was not possible to divide the group employed by permanent employment or precarious (insecure) employment as such type of data was not collected in the survey. Studies carried out elsewhere have found job insecurity to be related to poor health outcomes. [37,38] The study response rate was 50%, which is in line with decreasing response-rates in population based surveys in Sweden as a whole. [39] Some authors suggest that in population based surveys, non-respondent groups have a high probability to report poor health. [40,41] But, results of our 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 the County. In addition, apart from adjustments for the sample sizes in the different strata, the register data were used for calibration of non-response bias for various groups of individuals. [42-44] However, the study has strengths. The analyses were based in well collected data and very well validated instruments. For instance, self-reported health has been found to be a reliable measure of health, which considers both somatic health, level of well-being and person's quality of everyday life. [45,46]

CONCLUSION

This study found a statistically significant association between employment status and poor self-reported health. Men and women, who were out of work, similarly had higher odds ratios of poor self-reported health as compared with their employed counterparts.

The observed association was partially explained by health and socioeconomic variables such, long-standing illnesses, physical activity, income and social support. Longitudinal studies are warranted to further investigate this relationship.

Findings from this study suggest that policy-makers' at the County level need to pay attention to the health status of those out of work, particularly during times of economic recession and hardship.

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Conflicts of interest

The authors have no conflicts of interest to declare for this study.

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