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Employment Status, Gender and Self-Reported Health

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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 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. Therefore, the aim of this thesis was to investigate the relationship between employment status, gender and self-reported health in the County of Västernorrland.

Methods: The thesis used data from the cross-sectional survey Health on Equal Terms in the County of Västernorrland carried out in 2010. A total of 7547 persons at age 16-65 years were included in the analysis. Descriptive statistics and logistic regression analysis were performed and results were expressed as odds ratio with 95% confidence intervals.

Results: Women and men who were out of the labour market had odds of poor self-reported health of 2.31 (1.94-2.26) and 2.39 (1.96-2.94) respectively. Controlling for covariates reduced the odds of poor health, but the relationship continued to be statistically significant. For both genders, age group and low physical activity were associated with increased odds for poor self-reported health. Risky alcohol consumption and low social support in were associated with poor health in men.

Conclusion: This thesis found a statistically significant association between being out of the labour market and poor self-reported health. However, the odds of poor self-reported health were slightly higher for men. Longitudinal studies are needed to further investigate the observed relationship. Policymakers need to pay attention to the health status of those out of work, particularly during times of economic recession.

Keywords: Employment status, self-reported health, gender, Västernorland County

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Sammanfattning

Syftet med den här studien var att undersöka om kön har någon påverkan på relationen mellan anställningsstatus och självrapporterad hälsa bland ekonomiskt aktiva personer som bor i Västernorrlands län.

Populationen i den här studien var totalt 7547 personer i åldrarna 16-65 år i Västernorrlands län. Undersökningen ”Hälsa på lika villkor” var ett samarbete mellan Folkhälsomyndigheten och Västernorrlands län och utfördes med hjälp av en enkät som delades ut av Statistiska centralbyrån mellan mars och juni år 2010. Enkäten skickades hem till 14300 invånare, och de hade även möjlighet att svara på enkäten på nätet. Svarsfrekvensen var 51,1 procent.

Analysen av resultatet gjordes med hjälp av beskrivande analys och binär logistik regressionsanalys. Den logistiska regressionsanalysen användes för att mäta relationen mellan anställningsstatus och självrapporterad hälsa och den gjordes i två steg; (1) bivariat analys för att mäta relationen mellan anställningsstatus och självrapporterad hälsa, (2) multivariat regressionsanalys där det adderades variabler som kön, ålder, civilstatus, utbildning, inkomst, socialt stöd, rökvanor och fysisk aktivitet. Resultatet presenteras som OR med 95 procent konfidensintervall. Alla analyser är utförda i programmet SPSS 20.

Resultatet visar att 28,2 procent av kvinnorna och 27 procent av männen rapporterade deras hälsa som dålig och att 39,9 procent av kvinnorna och 31 procent av männen inte var anställda. Det fanns en relation mellan anställningsstatus, kön och självrapporterad hälsa. Oddsen att ha sämre självrapporterad hälsa när man inte är anställd var 2,31 (1,94-2,26) för kvinnor och 2,39 (1,96-2,94) för män, jämfört med dem som var anställda. Efter kontroll av confounders sänktes oddsen något, till 2,05 (1,60-2,64) för kvinnor och till 2,03 (1,94-3,71) för män, men resultatet var fortfarande statistiskt signifikant.

Den här studien upptäckte en statistiskt signifikant association mellan anställningsstatus och dålig självrapporterad hälsa. Kvinnor och män, som inte var anställda, rapporterade deras hälsa som dålig i större utsträckning än dem som var anställda. Hur som helst så var oddsen för dålig självrapporterad hälsa lite högre för män än för kvinnor. Denna association kunde till viss del förklaras av socio-ekonomiska- och livsstilsvariabler som långtidssjukdom, fysisk aktivitet och socialt stöd.

Longitudinella studier behövs för att vidare kunna undersöka denna association. Det är viktigt att politiker och folkhälsoarbetare tar hänsyn till hälsan hos dem som inte är anställda, speciellt när lågkonjunktur råder.

Nyckelord: Anställningsstatus, självrapporterad hälsa, kön, Västernorrlands län

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1. Background

The past century witnessed an increase in women's participation in the labour market (1). For instance in the European Union, this increase was found to 2.6 percent between 2005 and 2011 (1) and that the gap between men's and women's activity rate remained somewhat constant during the same period at around 12.6 percent by 2011. During the same year, fourteen percent of the female working population was in temporary employments as compared to 13.6 of the male working population. Furthermore in the twenty seven members of the European Union (EU-27), the gender gap in unemployment was around 1.4 percent points in the period 2005-2007. Although the grim scenario above, it is suggested that the gender gap has reduced since the economic global crisis mostly due to the unemployment of men working in the construction sector (1).

In Sweden, both women and men are extensively employed compared with other countries (2). Furthermore women are increasingly starting their own businesses. However, despite decades of constant effort to promote gender equality, the Swedish labour market and business sector are still marked by gender imbalances. Women and men work to almost the same extent but pursue different activities and hold different positions. Almost half of all working women are employed in the education, health care and social care services, which are largely to be found in the public sector. It is estimated that more than eighty percent of all working men are privately employed. Most women are employed in insecure jobs which reduce their overall chances of exercising influence in the workplace (2). These differences in labour market placement for men and women may lead to differences in health outcomes (2).

Various studies have shown a relationship between employment status and self-rated health (3-5). For instance a study carried out in southern Sweden that investigated the association between unemployment and self-rated psychological health demonstrated that unemployed persons had a significantly higher probability for poor self-rated psychological health and that this was more common among those with economic stress (3). In this study the odds for poor self-rated health for those unemployed was 4.10 (3.12-5.37) among men and 3.50- (2.73-4.50) among women, compared with those employed after adjusting for age, country of origin and education (3). An American study which intended to investigate women's health, employment, and family life found that women's self-reported health was increasing as well as their participation in the labour market (4). However, the health benefits of employment declined to a certain degree when it was combined with taking care of a young child (4). In addition, a Swedish longitudinal study which analysed the association between unemployment and self-rated health found a strong relationship between unemployment and self-rated health among women, even after controlling for co-variates (5). The odds for poor self-rated health for those unemployed was 3.31 (1.85-5.92) among women and 1.57 (0.83-2.99) among men respectively, compared with those employed (5).

Several studies have found a relationship between poor self-rated health and mortality (6-7). An American study that examined the relationship between self-rated health and mortality found out that the relationship was strong (7). A 22-year follow-up study performed in southern Sweden which aimed to examine whether poor self-rated health can independently predict mortality (6). The odds ratio for mortality was 1.5 (1.4-1.7)

for men and 1.4 (1.2-1.6) for women which showed that poor self-reported health predicted increased mortality. After adjustments were made for biological risk factors, the association was still significant among men (6).

The relationship between employment status and self-rated health has also been found to vary by gender. Although women's health has improved in the last decades there is still a gap with women reporting worse self-rated health than men (4, 8). A Swedish study carried out in 2013 that aimed to investigate gender differences in the association between self-rated health and impaired glucose tolerance confirmed found that the prevalence of low self-rated health was higher among women (35.4 percent) than men (22.1 percent) (8). Also Reine et al. found a significant association between unemployment and self-rated health among women only (5). However, other studies have found that the odds for poor self-reported health to be higher among women than among men (5).

The County of Västernorrland in the Mid-Sweden region houses various industries and services and in recent years has experienced high levels of unemployment across all age groups and sexes (9). For example a mapping of trends in among adolescents outside the labour market showed that over a thousand young adults in the county of Västernorrland were unemployed already in year 2004 (10). The unemployment situation deteriorated following the recession in 2008 and several residents lost their jobs during this time, especially in the industries (9). Within the County, the labour market is strongly divided by gender in this area and a lot of women works within the health care services and education while men are found in the trade market, the building trade and financial occupation. In the county of Västernorrland, 3.0 percent of the women and 3.7 percent of the men were unemployed in 2008 (as compared with the national average of 2.7 and 3.5 respectively) (9).

As for illness in this area it is significantly worse than in the country (9). In the county of Västernorrland the number was in 2008 41.7 percent compared with the country with 36.2 percent. The rate of illness is higher among women than men in the area as well as in the country (9). In addition, the County's health panorama is characterized by high prevalence of sick leave as compared with the national average. For instance, a study in Northern Sweden found that the prevalence of sick leave was high among care personal (11) which is a common work for women in this region (9).

1.1 Employment, Working Conditions and Inequalities in Health: A Theoretical Framework

Employment conditions at the workplace have strong effects on our health (12). It is known that if your working conditions are good it can arrange for financial security, social status, personal development, social relations and self-esteem. Employment also protects from physical/psychological hazards which is very important for a good health (12). Except the direct health consequences of dealing with work-related inequalities, the health equity will be even greater because of work's potential role in reducing social inequities such as gender or ethnical background (12).

The relationship between working life and health can be understood through different ways according to the research by the WHO Commission on Social Determinants of Health, (1) *employment relations or labour relations*, the institutional structure that manages the relationship between employers and employees; (2) *employment conditions*, includes access to employment, unemployment and the security of work;

and (3) *working conditions – the way work is organized*, the physical, the chemical, the environment, ergonomics and the psychosocial work environment (12). For example, the labour market and employment conditions pathway says how easy it is to find work, what kind of work one can find, and what the terms and conditions of the work are (13-15). These terms and conditions can range from secure employment with good pay and benefits, to precarious work where conditions and pay are often below the minimum legislated standards (13-15). This thesis explore the relationship between employment status (if whether people have paid employment or not) and self-reported health according to gender status (See Figure 1).

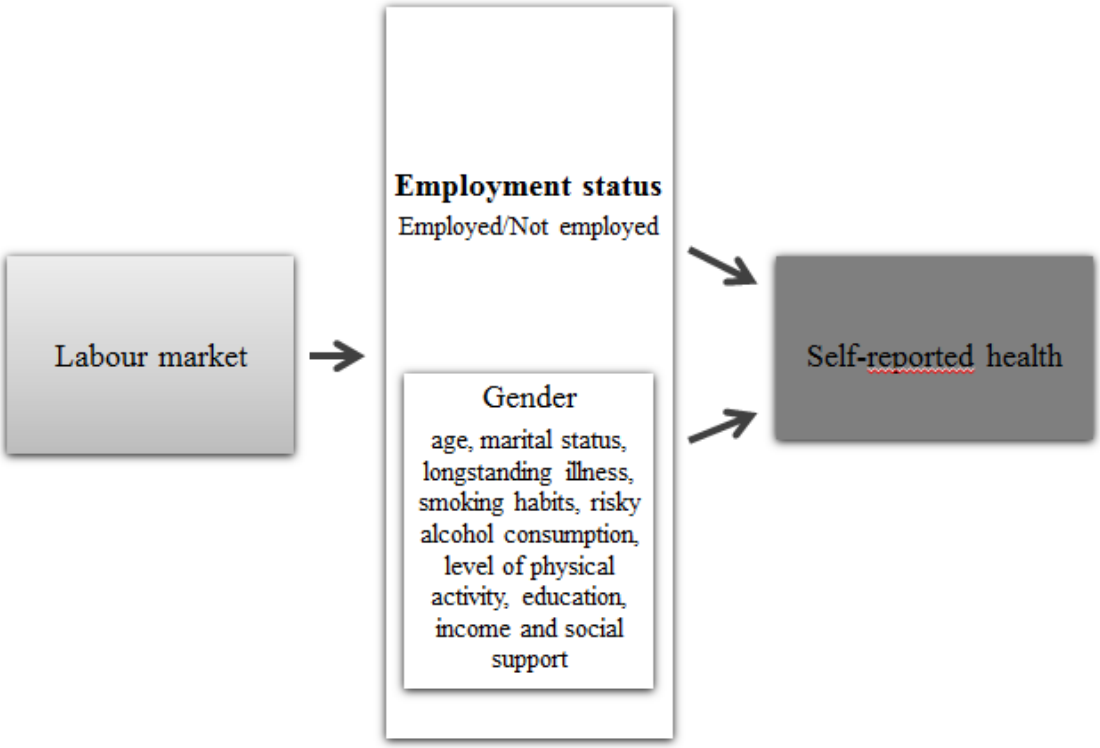

Figure 1: Adapted from Muntaner et al 2010

1.2 Study rationale

The authority of public health in Sweden has eleven areas (goals) that have a great importance for the public health work in the country (16). The overall aim of the eleven goals is to create conditions for a good public health for the entire population. One of the areas is *financial and social confidence* which is associated with financial safety, equality and affinity in the society. In addition, another area which is important to this thesis is a well-functioning labour market with full employment and a strong economic, a good working life with good working conditions. Employment does not only give income but also provide opportunities for people to be a part of the society and to develop relationships with other people (16).

The recent economic recession affected Västernorrland County in a way which worsened the already existing unemployment rate. Therefore this study hypothesizes that the combination of a volatile labour market conditions and high levels of unemployment might affect self-rated health equally among men and women living across the County**.** This study will contribute to the ongoing public health efforts in the county of Västernorrland, since no similar studies have been carried out across the County.

2. Objective

The aim of this study is to investigate gender differences in the relationship between employment and self-rated health among the economically active persons living in Västernorrland County.

2.1 Research questions

- Does the relationship between employment status and self-rated health vary by gender?

- What factors explain the relationship between gender, employment status and self-reported health?

3. Methods

3.1 Study design and subjects

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 amounted a total of 14 300 individuals distributed by health center 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 was a total of 7547 people who answered the questionnaire which corresponded to a response rate of 51, 1 percent.

3.2 Data collection

The survey was cooperation between the Swedish National Institute of Public Health and 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 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 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. The respondents 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 contained background questions, questions about health, lifestyle, economic conditions, labour and employment status as well as security and social relationships. Demographic data was collected from the Register of total population, education registry as well as income and taxation register.

3.2.1 Ethical considerations

There are ethical principles to consider in research (17). The basic individual protection requirements include: (1) *the requirement of information* means that the researcher is going to inform those who are involved in the study about their part in the project and the conditions for their participation. Respondents are also informed that the participation in the study is voluntary and that they can leave the study whenever they want; (2) *the requirement of agreement* which means that the researcher is going to get the participants agreement to participate in the study. In some cases the agreement has to be obtained from the guardian if the participant is under fifteen years of age or in cases where the study is ethical sensitive. The participants have the right to determine their involvement in the study and to decide by themselves if they want to participate, for how long and in what conditions they should participate or terminate their participation; (3) *the requirement of confidentiality and the requirement of using* that means that information about everyone that participates in a study shall be given maximum confidentiality and all the personal information is going to be reserved in a way so that unauthorized cannot take advantage of them; (4*) the requirement of using* means that information collected about individual persons only allowed to be used for research purposes (17).

In this study an information letter was sent out together with the questionnaire where the participants could read about the background and the objective with the study and all about these requirements of research. The participants also were informed trough this letter that the study was made in cooperation with Statistics Sweden and the Swedish National Institute of health. The letter also informed respondents that the collected information would be matched to the Swedish registrar for variables like education, income and taxation.

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

3.3 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.

3.3.1 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 divided in two categories, employed and not employed. The employed group included people who were employed. The not employed group included the unemployed, parental leave, students, and those inactive.

3.3.2 Other independent variables (control variables).

Demographics and socio-economics variables such as age, sex, marital status, education and income as well as social support, smoking habits and physical activity were used as control variables.

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

Marital status was defined in terms of being married (or living with a partner), being single (including divorced partner) or being 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 (20). 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 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) 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.

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?" The answers were divided into three categories; low, moderate or vigorous physical activity.

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

3.4 Statistics analyses

The statistical analysis consisted of descriptive and binary logistic regression analysis. The logistic regression was used to assess the relationship between employment status and self-reported health, and was performed using two models. First, a bivariate analysis was carried out to assess the relationship between employment status and self-.reported health only (see table 2 and 3). Then confounders such as age, sex, marital status, education, income, social support, smoking habits and physical activity were added in the multivariate regression analysis. Results are presented as OR with 95% confidence intervals. All analyses were performed using SPSS 20 (18).

4. Results

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

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

Variable	Women N = 2788		Men N = 2262	
	n	%	n	%
Self-reported health				
Good health	968	70.6	1621	71.7
Poor Health	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	14.8
Demografic variables				
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-economic variables				
Education				
Primary school or similar	420	15.0	461	20.4
Secondary school or similar	1480	53.1	1366	60.4
University or similar	863	31.0	404	17.9
Missing	25	0.9	31	1.3
Income				
< 250 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	1.4
Social support				
Yes	2503	89.8	1914	84.6
No	247	8.9	320	14.2
Missing	37	1.3	28	1.2
Health behaviour variables				
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 smoked daily	1462	52.4	1148	50.8
Missing	286	10.3	268	11.8
Risky alcohol consumption				
Yes	384	14.0	504	22.3
No	2376	85.2	1740	76.9
Missing	23	0.8	18	0.7
Physical activity				
Low physical activity	341	12.2	360	15.9
Moderate physical activity	1164	41.9	886	39.2
Moderate regular physical activ	653	23.4	532	23.5
Vigorous physical activity	594	21.3	457	20.0
Missing	31	1.2	27	1.2
Longstanding illness				
No	1798	64.5	1477	65.3
Yes	965	34.6	767	33.9
Missing	25	0.9	18	0.8

Results of the bivariate analyses found a relationship between employment status, gender and self-rated health (see Table 2 and 3). Compered to employed persons, those out of the labour market had odds ratio of 2.31 (1.94-2.26) for women (see table 2) and 2.39 (1.96-2.94) for men respectively (see Table 3). Controlling for co-variates (age, marital status, longstanding illness, smoking habits, risky alcohol consumption, level of physical activity, education, income and social support) reduced the odds ratio to 2.05 (1.60-2.64) for women (see Table 2) and to 2.03 (1.94-3.71) for men respectively (see Table 3).

Age, longstanding illness, risky alcohol consumption, physical activity and no social support were also associated with poor self-rated health (see Table 2 and 3). For instance regarding age, the odds ratio was 2.14 (1.02-3.74) at age 56-65 among women and 3.21 (1.71-6.03) among men as compared with those at age 16-25 years. Those with long standing illness had the odds ratio of 6.57 (5.02-8.61) among men compared with those who did not have longstanding illness. Furthermore, respondents with low physical activity had the odds ratio 4.52 (3.02-6.78) among women and 7.05 (4.36-11.41) among men respectively. Men with risky alcohol consumption had odds of 1.42 (1.03-1.96) compared with men without risky alcohol consumption (see table 3). In regard to social support, persons with no social support were more likely to rate their health as poor and had odds of 1.78 (1.26-2.53) for women (see table 2) and 2.01 (1.39-2.89) for men respectively (see Table 3).

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 County 2010.

Variable	**Unadjusted**		**Adjusted**	
	OR	95 % CI	OR	95 % CI
Employment status				
Employed	Reference		Reference	
Not employed	2.31	(1.94-2.26)	2.05	(1.60-2.64)
Demografic variables				
Age group				
16-25			Reference	
26-35			1.65	(1.05-2.61)
36-45			1.83	(1.15-2.19)
46-55			2.31	
56-65			2.14	
Marital status				
Married			Reference	
Single			0.88	(0.69-1.13)
Widowed			1.26	(0.53-2.99)
Socio-economic variables				
Education				
Primary school or similar			1.23	(0.84-1.81)
Secondary school or similar			1.43	(1.10-1.86)
University or similar			Reference	
Income				
< 250 th SEK			1.50	(0.97-2.31)
250-750 th SEK			1.31	(0.95-1.78)
> 750 th SEK			Reference	
Social support				
Yes			Reference	
No			1.78	(1.26-2.53)
Health behaviour variables				
Smoking habits				
Smoking daily			1.31	(0.94-1.85)
Smoking occasionally			0.97	(0.60-1.56)
Stopped smoking			1.21	(0.93-1.59)
Never smoked daily			Reference	
Risky alcohol consumption				
Yes			1.34	(0.98-1.84)
No			Reference	
Physical activity				
Low physical activity			4.52	(3.02-6.78)
Moderate physical activity			3.29	(2.36-4.58)
Moderate regular physical activity			1.34	(0.98-1.84)
Vigorous physical activity			Reference	
Longstanding illness				
No			Reference	
Yes			0.17	(0.14-0.21)

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 County 2010.

Variable	**Unadjusted**		**Adjusted**	
	OR	95 % CI	OR	95 % CI
Employment status				
Employed	Reference		Reference	
Not employed	2.39	(1.96-2.94)	2.03	(1.94-3.71)
Demografic variables				
Age group				
16-25			Reference	
26-35			2.12	(1.14-3.96)
36-45			2.50	(1.35-4.69)
46-55			2.97	(1.57-5.59)
56-65			3.21	(1.71-6.03)
Marital status				
Married			Reference	
Single			0.98	(0.72-1.33)
Widowed			1.39	(0.94-2.07)
Socio-economic variables				
Education				
Primary school or similar			1.69	(1.05-2.75)
Secondary school or similar			1.39	(0.94-2.04)
University or similar			Reference	
Income				
< 250 th SEK			0.95	(0.55-1.68)
250-750 th SEK			1.04	(0.75-1.43)
> 750 th SEK			Reference	
Social support				
Yes			Reference	
No			2.01	(1.39-2.89)
Health behaviour variables				
Smoking habits				
Smoking daily			1.04	(0.68-1.61)
Smoking occasionally			1.06	(0.62-1.83)
Stopped smoking			1.07	(0.77-1.49)
Never smoked daily			Reference	
Risky alcohol consumption				
Yes			1.42	(1.03-1.96)
No			Reference	
Physical activity				
Low physical activity			7.05	(4.36-11.41)
Moderate physical activity			3.43	(2.22-5.32)
Moderate regular physical activity			1.87	(1.16-3.03)
Vigorous physical activity			Reference	
Longstanding illness				
No			Reference	
Yes			6.57	(5.02-8.61)

5. Discussion

5.1 Results discussion

This study found an association between employment, gender and self-rated health. Other studies have found similar relationship (3-5). For example a Swedish study found that unemployed persons had a significantly higher probability for poor self-rated health (3). In the study the unemployed had significantly higher odds ratio of poor psychological health both among men and women even though economic stress and trust affected this association (3). Schnittker found that women's participation in the labour market was increasing and so their self-reported health (4). In addition, he found that the health benefits of employment declined to a certain degree when employment was combined with taking care of a young child (4).

In this study, the odds ratios of the association between employment and self-rated health were slightly higher among men as compared to women. Nevertheless, studies have found different results regarding the relationship between self-reported health and gender (4-5, 8). For instance, a study made in Sweden investigated gender differences in the association between self-rated health and impaired glucose found out that the prevalence of low self-reported health was significantly higher among women (35.4 %) than among men (22.1 %) respectively (8). A study carried out in northern Sweden with the objective to investigate the association between unemployment and self-reported health as well as high alcohol consumption found a strong relationship between unemployment and self-rated health among women and unemployment and high alcohol consumption among men (5).

Controlling for other variables (age, marital status, longstanding illness, smoking habits, risky alcohol consumption, level of physical activity, education, income and social support) reduced the odds from 2.31 (1.94-2.26) to 2.05 (1.60-2.64) for women and from 2.39 (1.96-2.94) for men, but it continued to be statistically significant. Reine et al. found similar results (5). After controlling for health-related selection, potential mediators and background factors the association between unemployment and self-reported health continued to be strong. Reine and colleagues argued then that the results indicate that other factors could explain the observed poor self-rated health among those unemployed (5).

The County of Västernorrland has always experienced high levels of unemployment and sick leave for many years. However, this situation further worsened after the recent economic downturn which started in 2008 with a pick in 2010 the time which the data in this thesis was collected (19). For instance, the unemployment rate increased from 5.9 percent in 2008 to 9.4 percent in 2010 (19).

In the analysis, other variables (co-variates) were associated with poor self-reported health. For instance, the odds for poor self-reported health were 2.14 (1.02-3.74) at age 56-65 among women and 3.21 (1.71-6.03) among men as compared with those aged16-25 years. Other studies have found similar results. For instance, another Swedish study which aims to examined whether poor self-rated health could independently predict all-

cause mortality showed a significant association between poor self-rated health and age (HR 1.49 CI 1.39-1.60) (6). In addition, results of this study found increased risk of poor self-reported health among men with risky alcohol consumption, with odds ratio of 1.42 (1.03-1.96). Other studies have found similar results. A study carried out in Russia that investigated the association between patterns of alcohol consumption and self-reported health found that the odds for poor self-reported health with increased alcohol consumption (20). Another study found other associations between poor self-reported health and alcohol consumptions among men (21).

Also, respondents who reported low physical activity had odds ratio of poor self-rated health of 4.52 (3.02-6.78) among women and 7.05 (4.36-11.41) among men respectively. Other studies confirm this association (22). For instance, a Danish study which examined the association between self-reported physical activity and self-reported health found that the odds for optimal self-rated health were 8.38 (5.46-12.87) for men and 6.42 (3.09-13.3) for women who performed vigorous physical activity, compared with those inactive (22).

Results of this study also found an increased risk of poor self-reported health among people with no social support. The odds ratio was 1.78 (1.26-2.53) for women (see Table 2) and 2.01 (1.39-2.89) for men (see Table 3). This finding has been reported by other studies. For instance Demirchyan et al study carried out in Armenia found that weak social support was one of the strongest independent in the association with self-rated health (21).

5.2 Methods discussion

This thesis found an association between employment status, gender and self-reported health. However, the data analysis had some limitations. The analysis is based on cross-sectional survey data which makes difficult to preclude causality as well as its direction. 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 retired people. Furthermore, it was not possible to divide the group employed by permanent employment or precarious (insecure) employment. Studies carried out elsewhere have found job insecurity to be related to poor health outcomes (23-24).

The statistically significant relationship between employment status, gender and self-reported poor health was not eliminated after controlling for an array of covariates. This might suggest that other factors which were not captured by the data collection are at play. But although the limitations stated above, the data analysis in this thesis has strengths. The analysis was 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 takes 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 (25-26). However, employment status is fairly new to investigate when it comes to health outcomes, thus further research is needed to examine this found association.

6. Conclusion

This thesis found a statistically significant association between employment status and poor self-reported health. Men and women, who were out of labour, reported their health as poor compared with those employed. However, the odds of poor self-reported health were slightly higher for men. The association was to some extent explained by socio-economic and life style variables such as long standing illness, physical activity and social support. Longitudinal studies are needed to further investigate this relationship. Nevertheless, policy-makers' need to pay attention to the health status of those unemployed, particularly during times of economic recession.

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