Employment status and health care utilization in a context of economic recession: Results of a population based survey in East Central Sweden

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Abstract: *Introduction:* The most recent economic recession left many people outside the labour market world-wide, causing widespread poverty and social exclusion. Gävleborg County in East Central Sweden experienced massive layoffs caused by closure of various industries. *Objective:* The objective of this study was to investigate differences in health-care use according to employment status at the pick of the recent economic recession. *Methods:* The study used data from a cross-sectional survey "Health in Equal Terms" carried out in Gävleborg County in 2010. The sample included 4245 persons aged 16-65 years. Descriptive and logistic regression analyses were used to assess differences in health-care seeking behaviour by employment status. *Results:* Employment status was statistically significantly associated with health-care use in Gävleborg County. In the bivariate analysis people who were not employed had odds ratio of 1.62 (CI 1.18-1.72) for health care use as compared to their employed counterparts. Controlling for other variables in Model II to IV removed the statistical significance and reduced the odds to 0.44(CI 0.20-1.00). *Conclusions:* This study found that at the pick of the most recent economic recession, people who were out of work used more often health services as compared with their employed counterparts. The observed differences in health-care use were explained by demographic, socio-economic and health-related variables. Further studies are needed to analyze trends of healthcare utilization according to employment nationally, particularly at the county level.

Keywords: Health-Care Use, Employment Status, Economic Recession

1. Introduction

In Europe, equitable access to high-quality health care constitutes a key challenge for health care systems across the continent [1-5]. As in Europe, equity in health-care is a longstanding goal of Sweden's healthcare political agenda [6, 7]. The country's good health and health-care on equal terms for the entire population is also explicitly stated in law [8]. "On equal terms for the entire population" means that healthcare utilization is to be determined only by need. Factors, such as socio-economic status (education, income, and occupation), sex, ethnicity and employment status should be irrelevant regarding the amount and quality of care that is provided to the population [9]. However, empirical evidence indicates that health-care use in Sweden has been associated with factors such as private economy, level of education and unemployment [9-11]. The most recent economic recession left many people outside the labour market world-wide causing wide-spread poverty and social exclusion [4, 12-17].

It is suggested that during stressful economic and social circumstances the demand on public health services can increase, but that is not always due to a presence of organic pathology rather to potential psychological distress masked by physical complaints [17, 18].

Although Sweden as a country feared better than other European countries (e.g. Greece, Spain and Italy) during the most recent economic recession, the various Counties did not follow the national pattern. For instance, the County of Gävleborg in East Central Sweden, which is the context of this study, experienced massive layoffs due to closure of various industries [19,20]. As a consequence of the economic recession which started in 2008, the unemployment rate among adults 16-64 years increased sharply during the period 2008-2010 and was 12% of the labour force in 2010 (against a national average was 8.7% at the same time) [20,21]. In addition, youth unemployment rate in the County (18-24 years) increased during the same period from 17.2 to 27.3% [22]. And still today, the county has not fully recovered from the effects of recession. Yet, no study has attempted to assess the impact of economic hardship on health care outcomes. Therefore, the objective of this study was to investigate differences in health-care use by employment status in Gävleborg County during year 2010, two years after the recession which started in 2008.

2. Material and Methods

Data for this study come from the 2010 "Health in Equal Terms", a cross-sectional survey carried out by the County of Gävleborg and the National Institute of Health. A multi-stage, stratified sample was used to draw a representative sample for the County of Gävleborg residents aged 16-84 years. A total of 12,000 postal and web questionnaires resulted in the participation of 5,983 persons (approximately 50% response rate).

2.1. Survey procedure

The survey was conducted by Statistics Sweden as a postal survey in combination with web survey. The survey was collaboration between the Swedish National Institute of Public Health and the Gävleborg County Council, and carried out between March and June 2010. A mailed questionnaire was sent for the first time in Mars 22, 2010. The respondents had the opportunity to choose if they wanted to answer the questionnaire on paper or on the web; login details came with mailings, where they could login through Statistics Sweden's website to complete the survey. Along with the questionnaire, the selected individuals received an information letter containing study background and objectives, information about client, how the answers would be used and that data would also be retrieved from the Register of total population, (data on education, income and taxation). The letter also emphasized the confidentiality of the survey as well as to whom they could turn to if there were any questions regarding the investigation. Three reminders were sent out to the participants to return the questionnaires. All the questionnaires were scanned by Statistics Sweden. The questionnaires contained questions about, health, economic conditions, lifestyle, labour and employment as well as security and social relationships.

2.2. Measurement of Variables

2.2.1. Outcome Measure

The outcome measure in this study was healthcare use. In the survey, respondents were asked, "Have you had contact with healthcare services in the past three months with regard to a problem/illness? Answers were 'Yes' or 'No'.

2.2.2. Independent Variables

The main independent variable in this study was employment status. In the survey, employment status was assessed with one question, "What is your current main job?" The answers were dichotomized into two categories: 'employed' and 'not employed'. The employed group included people in employment as well as those with work, but on parental leave. The group of 'not employed' included the unemployed, students, and people with disability.

2.2.3. Other Independent Variables

Age was grouped in several groups: 16-25; 26-35; 36-45; 46-55; 56-65; *Marital status* was categorized as: married, single and widowed; *Self-rated health* was assessed with the question: 'How do you rate your general health?' with the options 'Very good', 'Good', 'Neither good nor poor', 'Poor', and 'Very poor'. For the analysis, the categories 'Very good' and 'Good' were combined as good health and the categories 'Neither good nor poor'; 'poor' and 'very poor' were combined as poor; *Smoking habits* were assessed by the following questions a) "Do you smoke daily?" Respondents answered with 'Yes' or 'No'.

2.2.4. Risky Alcohol Consumption

Risky consumption of alcohol was assessed by three questions a) "How often have you drank 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 (risky consumption) and No (no risky consumption).

2.2.5. Self-Reported Stress

In the survey respondents were asked: do you feel stressed (felt tense, nervous, worried) at the present? Potential answers were: not at all; to same extent; fairly much and very much. For the purposes of this study the answers were dichotomized in "yes" and "No".

2.2.6. Long Standing Illness

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

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

Income was collected from the 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 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).

2.3. Statistical Analyses

The analyses included descriptive statistics and weighted logistic regressions. Furthermore, the logistic regressions consisted of four models. Model I, addressed the relationship between employment status and health care use only. Then demographic variables (age, sex and marital status) were added in Model II and health related-variables such as self-reported health, smoking habits, risky consumption of alcohol, long-standing illness and self –reported present stress were added in Model III. Finally, social and economic variables (education, income and social support) were added in Model IV. Missing values were excluded from the analyses. Results are presented as odds ratios with 95% confidence intervals. All analyses were performed using SPSS 20 [23].

3. Results

The distribution of the variables included in the analyses is presented in Table 1. In the sample, 45% of the respondents reported to have used health care services and 32% were not employed.

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

Variable	N (4245)	Percentage (%)
Health care visit		
No	2309	54.4
Yes	1887	45.0
Missing	49	1.2
Employment status		
Employed	2350	55.4
Not Employed	1389	32.7
Missing	506	11.9
Demographic variables		
Sex		
Male	1915	45.1
Female	2330	54.9
Age group		
16-25	575	13.5
26-35	488	11.5

Variable	N (4245)	Percentage (%)
36-45	816	19.2
46-55	1022	24.1
56-65	1344	31.7
Marital status		
Married	1808	42.6
Single	2374	55.9
Widowed	63	1.5
Socio-economic variables		
Education		
Primary school or similar	871	20.5
secondary school/similar	2318	54.6
university/similar	1006	23.7
Missing	50	1.2
Income		
< 25o th SEK	908	21.4
250-750 th SEK	2038	48
>750 th SEK	1282	30.2
Missing	17	0.4
Social support		
Yes	3712	87.4
No	467	11
Missing	66	1.6
Health and health behaviour variables		
Self-rated health		
Good	2975	70.1
Poor	1194	28.1
Missing	76	1.8
Smoking habits		
Yes	714	16.8
No	3140	74.0
Missing	391	9.2
Risky consumption of alcohol		
No	3473	81.8
Yes	731	17.2
Missing	41	1.0
Long standing illnesses		
Yes	2621	61.7
No	1574	37.1
Missing	50	1.2
Self-reported stress		
Yes	2229	52.5
No	1998	47.3
Missing	18	0.2

Results of the regression analyses revealed a statistical significant relationship between employment status and health care use in Gävleborg County in 2010. In the bivariate analyses, people who were out of work had odds of 1.62 [CI 1.18-1.72] as compared with their employed counterparts (see Table 2 Model I). However, controlling for demographic variables (age, sex, marital status) reduced the odds to 1.41 (CI 1.20-1.58), but continued to be statistically significant (see Table 2 Model II). The odds of the relationship between being out of work and health care use further reduced to 0.99 (CI 0.83-1.18) in Model III when health variables were included. Finally, controlling for social and economic factors reduced the odds further to 0.44 (CI 0.20-1.00) in Model IV and the statistical significance disappeared.

Table 2. Odds ratios (ORs) with 95% confidence intervals (CI) for the relationship between employment status and health care visits, Health in Equal Terms Survey, Gävleborg County 2010.

Variable	Model I	Model II	Model III	Model IV
Employment status				
Employed	Reference	Reference	Reference	Reference
Not Employed	1.62 (1.18-1.72)	1.41 (1.20-1.58)	0.99 (0.83-1.18)	0.44 (0.20-1.00)
Demographic variables				
Sex				
Male		1.45 (1.27-1.66)	1.44 (1.28-1.62)	1.41 (1.26-1.70)
Female		Reference	Reference	Reference
Age group				
16-25		Reference	Reference	Reference
26-35		1.45 (1.11-1.91)	1.02 (0.75-1.38)	0.97 (0.68-1.38)
36-45		1.57 (1.22-2.03)	1.00 (0.74-1.34)	0.93 (0.66-1.34)
46-55		2.15 (1.67-2.76)	1.12 (0.84-1.50)	1.05 (0.74-1.49)
56-65		2.34 (1.84-2.97)	1.14 (0.86-1.51)	1.04 (0.74-1.46)
Marital status				
Married		Reference	Reference	Reference
Single		1.06 (0.91-1.32)	0.87 (0.72-1.04)	0.99 (0.83-1.17)
Widowed		1.74 (0.99-3.07)	1.34 (0.74-2.43)	1.54 (0.80-2.72)
Health/health behaviour variables				
Self-reported health				
Good			Reference	Reference
Poor			2.21 (1.84-2.64)	2.12 (1.74-2.47)
Smoking habits				
Yes			1.23 (1.03-1.53)	1.24 (1.01-1.51)
No			Reference	Reference
Risky alcohol consumption				
Yes			1.18 (0.96-1.44)	1.16 (0.95-1.43)
No			Reference	Reference
Long standing illness				
yes			3.32 (2.81-3.93)	3.3 (2.80-3.94)
No			Reference	Reference
Self-reported stress				
No			Reference	Reference
Yes			2.51 (2.06-3.07)	2.50 (2.02-2.90)
Socio-economic variables				
Education				
Primary school or similar				1.04 (0.80-1.36)
Secondary school/similar				0.98 (0.81-1.19)
University/similar				Reference
Income				
< 250 th SEK				0.82 (0.60-1.12)
250-750 th SEK				0.82 (0.60-1.12)
>750 th SEK				Reference
Social support				
Yes				Reference
No				0.76 (0.56-0.98)

Regarding other variables, there was a statistically significant relationship between age and contact with health care services throughout Models II to IV. Demographic variables were associated with health care use. For instance, age was statistically significantly associated with use of health care services. The highest odds were found among the age groups 36-45 and 46-55 with odds ratios of 2.15 (CI 1.67-2.76) and 2.34 (CI 1.84-2.97) respectively (see Model II). Also, males had higher odds of health care utilization as compared to females.

Moreover, there was a statistical significant relationship between being out of work and poor self-rated health. People who were not employed had odds of poor health of 2.21 (CI 1.84-2.64) in Model III and of 2.12 (CI 1.74-2.47) in Model IV. In addition, having a long-standing illness was associated with increased odds of health care use in Model III and IV (see Table 2). Also, respondents who reported current stress were more likely to have visited a health care facility with odds of 2.51 (CI 2.06-3.07) in Model III and 2.50 (CI 2.02-2.90) in Model IV, respectively.

4. Discussion

Our study found an association between being outside the labour market and an increased health care utilization. Other studies have found similar results [24-27]. For instance, using data from the Canadian Health Survey, Sidique et al [24] observed that unemployed people had a higher level of distress, greater short-term and long-term disabilities, reported a large number of health problems, had been patients more often, and used proportionately more health services. Also, in Croatia, Dragun and colleagues [27] found a high number of prescriptions per individual among the unemployed compared with employed persons. These authors interpreted the findings as an indication of an association between unemployment and health-related problems, including relative expenditure. Furthermore, Fild et al. in United Kingdom [26] and Giatti in Brazil [4] found high rates of healthcare utilization among unemployed persons. However, other studies have reported results contrary to our study. For instance, Pharr et al [28] observed that unemployed persons were more likely to delay contact with healthcare services due to cost and were less likely to have access to healthcare than their employed counterparts. It is argued that the delay in using health care by unemployed persons found in other studies might be related to the fact that as unemployment persists, economic resources dwindle and less money directly or indirectly worsens the pre-requisites for good health [28-30]. In Sweden, Krant et al found [31] that the relationship between unemployment and health-care seeking behaviour persisted after adjustment for socio-economic and demographic variables and long-standing illness, but contrary to our study, his research was carried out in times of economic stability.

It is suggested that the relationship between unemployment and health may be explained by: a) causation, where unemployment precipitates a decline in health, perhaps through the combination of effects arising from loss of income, increased unhealthy lifestyle, loss of self-esteem, and psychological distress, and in some settings, reduced access to care; b) selection, where a person's health status, gender, nationality, previous exposure to unemployment, or other personal characteristics, simultaneously place them at risk for both unemployment and poor health [30,32]. Unemployment can have serious consequences on mental health, which mainly manifests as depression, anxiety and alcoholism [33].

In our study, males were more likely to have had contact with health-care services. This result is contrary to findings in other studies [34, 35] and may be contextual for Gävleborg County. The County's industry employs a considerable number of male employees and during the most recent economic crises this group also experienced the greatest layoffs from the different industries [20-22]. Other studies have found links between factory closures and poor mental health. For instance, Studnica et al [36] observed high use of health services by unemployed persons due to poor psychological health after the closure of a furniture factory. However, although the "Health in Equal Terms" survey did not collect data on depression, our analyses included a variable called "self-reported current stress" as an indicator of possible preoccupation for being out of the labour market. Comparing to employed persons, those who were not employed and reported stress were three times more likely to have visited a health care facility than those who did not report current stress.

4.1. Limitations of the Study

This is a cross-sectional study, thus the exposure (employment status) and the outcome (health-care use) were determined simultaneously. Therefore, it was not possible to establish a temporal relationship between the two. Nevertheless, the study has a large sample of high quality data (collected by Statistics Sweden) [37]. Furthermore, the study response rate was fifty per cent, which is in line with decreasing response rates in population based surveys in Sweden as a whole [38]. Some authors suggest that in population based surveys, non-respondent groups have a high probability to report poor health [39, 40]. Moreover, 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 was used for calibration of non-response bias for various groups of individuals [41-43].

5. Conclusions

This study found that at the pick of the most recent economic recession, people who were out of work were more likely to use health services as compared to their employed counterparts. The observed differences in health care use were explained by demographic, socio-economic and health-related variables. Further studies are needed to analyze trends of health-care utilization according to employment nationally and especially at the county level.

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