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Faculty of Health and Occupational Studies

Socioeconomic Status and Depression among women in Stockholm County

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Abstract

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This thesis investigated the relationship between socioeconomic status (by occupation) and self-reported depression among women in Stockholm County. A quantitative study was conducted based on secondary data from the 2006 Stockholm County Public Health Survey. Data was analyzed using descriptive statistics and logistic regression analysis through SPSS statistical package. Results showed that low socioeconomic status (by occupation) increased the risk of reporting depression among women in Stockholm County. In addition, the study found that the relationship was to some extent explained by income and marital status. However, further studies are warranted of the relation between socioeconomic status (e.g. education and income) and depression among women in the Swedish population but particularly in Stockholm County.

Keywords: Depression; Mental health; Socioeconomic Status; Public Health Survey.

Sammanfattning

Charlotta T. Socioekonomisk status och Depression bland kvinnor i Stockholms Län. C-uppsats. Gävle: Högskolan I Gävle, Akademin för hälsa och arbetsliv; 2011.

Syftet med denna studie var att undersöka förhållandet mellan socioekonomisk status (efter ockupation) och själv-rapporterad depression bland kvinnor i Stockholms län. En kvantitativ studie genomfördes baserat på data från Stockholms läns folkhälsoenkät 2006. Data analyserades med deskriptiv statistik och logistisk regressionsanalys med hjälp av det statistiska programmet SPSS. Resultatet visade att låg socioekonomisk status (efter ockupation) ökade risken för självrapporterad depression bland kvinnor i Stockholms län. Dessutom så fann studien att förhållandet kunde till viss del förklaras av inkomst och civilstånd. Men ytterligare forskning krävs för att undersöka förhållandet mellan socioekonomisk status (t.ex. utbildning och inkomst) och depression bland kvinnor i den svenska befolkningen, särskilt i Stockholms län.

Keywords: Depression; Mental hälsa; Socioekonomisk Status; Folkhälsoenkät.

Foreword

Contents

1. Introduction

The World Health Organization has reported that there are 450 million people worldwide suffering from mental or behavioral disorders. Furthermore mental and behavioral disorders account for more than one tenth of all diseases in the world and in addition mental disorders is among the 10 leading causes to disability worldwide. Most illnesses, mental and physical, are influenced by a combination of biological, psychological, and social factors [1]. Furthermore mental health is determined by socioeconomic and environmental factors such as poverty, low education, poor house income and low income in developed and developing countries. In addition there is also a greater risk to ill mental health regarding to experience of insecurity, hopelessness, rapid social change, violence and physical ill-health [2].

An American study which examined the association between employment status, physical health and depression using data from two large cross-sectional surveys found a strong association between employment status and physical health. Employees in optimal jobs were less likely to report poor/fair health in comparison to employees in barely adequate or inadequate jobs. Those with better jobs were also less likely to report depression and the risk for depression were higher among those with employment status lower than optimal jobs. The association remained significant after adjusting for age, gender, ethnicity and socioeconomic status [3].

Another American study, using cross-sectional data from the CARDIA study and applied CES-D (the Center for Epidemiological Studies depression scale score), examined the association between Subjective Social Status (SSS) and ill health. The determinants in SSS consisted of occupational position, education, household income, satisfaction with standard living and feeling of financial security regarding the future. The age-adjusted results indicated that women with the highest SSS ranks 1-2 were less likely to report depression in comparison to women with the lowest SSS ranks 9-10 and the lower ranks between. After adjusting for employment grade, education and income, the gradient for RII (Relative Index for Inequality) increased and lead to an attenuation in the association between SSS and depression in women, which indicated a strong association between socioeconomic status and depression in women [4].

Furthermore Adler et al assessed data from the Whitehall study II and the CARDIA study to measure whether SSS and SES might have similar associations with health outcomes. Results

showed that SES reduced the association between SSS and health outcomes among Whitehall-II participants more than CARDIA [5].

A populations-based case-control study carried out in Denmark examined the association between occupational position and affective and stress-related disorders in the Danish workforce. The study found a relationship between ill-health and different occupations among women. In addition the study showed that women were more likely to report either affective or stress-related disorders in comparison to men. Women in occupations such as general managers, health professionals, teaching professionals, health-associated professionals, teaching-associated professionals, personal & protective services, elementary sales & service occupations and at last other laborers had significantly increased risk of having affective and/or stress-related disorders [6].

A cross-sectional study conducted in Helsinki examined the association between socioeconomic circumstances and common mental disorders in middle aged men and women. The results showed a strong association between ill mental health (GHQ-12 and SF-36) and childhood economic difficulties, household income and current economic difficulties among women even after adjustment for other distal socioeconomic indicators [7].

In Sweden, very few studies have explored the relationship between occupational social position and mental health. However, a populations-based study analyzed the association between mental health and socioeconomic- and lifestyle factors in 55 municipalities in five counties. Results showed that women were more likely to report mental health symptoms in comparison to men. Anxiety and depression had a strong association to factors such as poor social support, experiences of being belittled, employment status, economic hardship, critical life events and functional disability among men and women. Lifestyle factors such as physical inactivity, underweight and risk consumption of alcohol were also strongly correlated with anxiety and depression [8].

Overall, studies in high and low income countries have suggested that the economic context has an impact in women's depression [9,10,11]. Therefore it is expected that in Sweden and Stockholm in particular, the ongoing socioeconomic and labor market changes may affect individual's women's social position which can ultimately affect their health outcomes (mental and physical). Furthermore, women are more vulnerable to low socio-economic status than men and experience greater level and risk of depression (9). Taking into account that very few studies have addressed the role of occupational class structure on depression in

2

the general population in Sweden as a whole and in Stockholm in particular, this thesis has aimed to fill this void by investigating this issue among women residing in Stockholm County.

1.1 Objective

The objective of the present study was to investigate the relationship between socioeconomic status (by occupation) and self-reported depression among women in Stockholm County.

2. Material and Method

This is a quantitative study based on cross-sectional data and in this study descriptive statistics, bivariate analysis and multivariate analysis have been used in order to describe the sample distribution and associations between self-reported depression and socioeconomic status.

2.1 Data and sample description

Stockholm County consists of 26 municipalities with a population of more than 2 million inhabitants and 829 417 people of the County population lives in Stockholm city (the capital of Sweden). The County Council of Stockholm is responsible for health care, public transport, regional planning and culture [12,13].

This thesis use cross-sectional data from the 2006 Stockholm County Public Health Survey (SCPHS). The SCPHS is used to monitor the health of Stockholm County's population and to inform health policy. The survey used a self-administered postal questionnaire and a randomly stratified sample by area which the initial sample consisted of 57 000 people living in Stockholm County in the age of 18-84 years. Of the total, 34707 people completed the questionnaires which gave a response rate of 61 percent. The questionnaire consists of seven areas: health and disease, living conditions, mental health and safety, housing and living environment, family and community, economy, employment and occupation. Furthermore information regarding the survey can be found elsewhere [14,15]. The sample of this thesis consisted of 19 084 women.

2.2 Specification and measurement of variables

Depression

Self-reported depression was assessed using the following question "Have you received from a doctor any of the following diagnoses? Depression". Possible answers were: no; yes, one time and yes, several times. In this study, women who answered yes at any of the alternatives available were regarded as having a depression.

Socioeconomic status

The most traditional indicators of socioeconomic status are income, education and occupation and have been beneficial in order to describe and evaluate health inequalities. However these indicators show only parts of the relationship between SES and health and there are numerous indicators contributing to additional information within this field although the previous indicators have been of great importance as health determinants [16,17]. In this study the measure of SE position used is occupation. Classification of occupation is ruled by the Nordic Classification of Occupations, which is based on the International Standard Classification of Occupation [18]. Measures of occupation were assessed by asking participants in the SCPHS about their own current occupation or their main occupation when working and their main task. In the study five socioeconomic groups were created given from the occupational information they gave: manual worker; low non manual worker; intermediate non manual worker; high non manual worker and entrepreneur.

Education level

Education level was measured by LISA database (2004) from Statistics Sweden and was grouped by the Swedish educational nomenclature SUN 2000 (old version). The original variable was classified into seven groups from the lowest to the highest level: primary school less than nine years; primary school nine or ten years; upper secondary school maximum two years; upper secondary school more than two years and maximum three years; higher or further education less than three years; higher or further education three years or more and post-graduate study [19]. In this study three groups were created: primary school or similar; secondary school or similar and university or similar.

Income

Income was also assessed from the Statistics Sweden's LISA database from 2004 measured as individual income, was divided in four groups: a) 0-99 thousand SEK a year; b)100-149 thousand SEK a year; c)150-199 thousand SEK a year and d) >200 thousand SEK a year. In this study three groups were created: 0-149 000 SEK, 150 000-260 000 SEK and 260 000 SEK and more.

Alcohol consumption

Alcohol use was measured by using the question "Have you consumed alcohol that represent at least a half bottle of "sprit" or two bottles of vine or six bottles of "stark öl" or 12 bottles of "folköl" in the last twelve months?. A dichotomous variable was created for those who did and did not drink alcohol.

Social support

Social support was assessed by asking the participants the following question: "Do you have one person or more that can give you support when you have personal problems or crisis in your life?" Available answers were; yes, always; yes, most of the time; no, not most of the time and no, never. In this study a dichotomous variable was created (yes and no) dividing those with social support and those without.

Work strain

Work strain was measured by two separate variables, demand and control at work. Data about the demand variable was assessed by using the following question: "Do you have enough time to do your work assignments?" and the control variable was assessed using the question: "Do you have the freedom to decide how the work is being done?" Available answers on the both of the questions were: yes, always; yes, most of the time; no, not most of the time and no, never. In this thesis a dichotomous variable was created (yes and no) in order to divide those with demand or control at work from those without.

Marital status

Marital status consisted of four categories: married, unmarried, divorced and widow.

Age

In this study three age groups were created as follows: 18-24 years; 25-44 years and 45-84 years.

2.3 Data analysis

Data was analyzed using descriptive statistics and logistic regression analysis through SPSS statistical package [20]. Logistic regression analysis was carried out in two steps, bivariate analysis and multivariate analysis. Step one consisted of a bivariate analysis residuals of the relationship between socioeconomic position (measured by occupation) and depression. On the other hand, step two consisted of multivariate analysis of the association between socioeconomic position and depression but this time controlled for other variables (education, income, social support, work strain and age). Missing values were excluded from the analysis. Results were presented as OR (with 95% CI).

2.4 Ethical considerations

The SPHS is carried out every four years and is approved by the Karolinska Institute Ethical Committee and the Committee of the Stockholm Council. SCPHS informed the respondents through an information letter about the background and the purpose of the survey as well as information being retrieved from Statistics Sweden. They were also informed that participation in the survey was voluntary as well as the information was to be handled with anonymity and protection by data protection and secrecy laws. By responding and sending back the questionnaire they agreed to be a part of the survey [15].

3. Results

Table 1 describes the sample distribution and all variables are included in the analysis (see Table 1). The majority of the women in the sample were 25 years of age and above, with a high percentage in the age group 45-84 years (54%) (see Table 1). Depression was detected in 16.5 percent of the 19 084 women in this study.

Table 1. Descriptive data of the sample distribution among women aged 18-84 in Stockholm County, SPHCS 2006

Variable	N=19084	%
Depression		
No	15528	81.4
Yes	3144	16.5
Missing	412	2.2
Occupation		
Manual worker	4766	25.0

Low non-manual worker	3470	18.2
Intermediate non manual worker	4411	23.1
High non manual worker	3047	16.0
Own entrepeneur	1064	5.6
Missing	2326	12.2
Income		
0-149	8887	46.6
150-260	4490	23.5
260+	5707	29.9
Missing		
Education level		
Primary school or similar	3045	16.0
Upper secondary school or similar	7109	37.3
University or similar	7174	37.6
Missing	1756	9.2
Age		
18-24	1618	8.5
25-44	7133	37.4
45-84	10333	54.1
Missing		
Marital status		
Married	8443	44.2
Unmarried	6563	34.4
Divorced	2827	14.8
Widow	1248	6.5
Missing	3	0.0
Alcohol consumption		
Yes	1188	6.2
No	15556	81.5
Missing	2340	12.3
Social support		
No	17051	89.3
Yes	1819	9.5
Missing	214	1.1
Work demand		
No	9747	51.1
Yes	2782	14.6
Missing	6555	34.3
Work control		
No	10818	56.7
Yes	1729	9.1
Missing	6537	34.3

Results of the bivariate analysis showed a statistically significant relationship between depression and occupation. Manual workers were more likely to report depression OR 1.38 (95% CI 1.15-1.66) in comparison with entrepreneurs which constituted the reference group (see Table 2, Model 1). There was no statistical association between depression and low non manual worker, intermediate non manual worker, high non manual worker compared with entrepreneur. Adjusting for other variables in the multivariate analysis reduced the odds of depression and the statistically significance disappeared, OR 1.15 (95% CI 0.89-1.47). Furthermore there was a relationship between income and depression, showing that women having an income 0-149 thousand SEK and 150-260 thousand SEK were more likely to be depressed in comparison with those with the yearly income of 260 thousand SEK or more. In addition unmarried women were more likely to be depressed with an OR 1.96 (95% CI 1.64-2.25). Education level, alcohol consumption, social support, work strain (work control and work demand) were not statistically associated with depression (see Table 2, Model 2).

4. Discussion

Using the 2006 Stockholm Public Health Survey, this thesis analyzed the relationship between occupational social class and self reported depression among women. Results indicated that there was a statistical significant association between socioeconomic position (as measured by occupation) and depression among women in Stockholm County. Women in lower occupational classes experienced high odds of depression. For instance, in the bivariate analysis, compared to own entrepreneurs (reference group), women in manual occupations had a four fold risk of reporting depression, odds of 1.38 (1.15-1.66, 95% CI). Other studies have shown similar results in associations between occupation/employment status and depression [3,4,6,8]. It is argued that the over-representation of depression in lower socioeconomic strata (SES) suggests that the structural arrangements (in this case occupational/work related arrangements) of society organize, in part, psychologically-impairing experiences and processes [5,6,7,9].

Controlling for other variables in the multivariate analysis removed the statistically significant relationship between occupational status and depression (See Table 2 Model 2).

Table 2. Odds ratios of the relationship between depression and socioeconomic status (by occupation), SPHCS 2006

Variable	Model 1	Model 2

	OR	95% CI	OR	95% CI
Occupation				
Manual worker	**1.38**	**1.15-1.66**	1.15	0.89-1.47
Low non manual worker	1.16	0.96-1.41	1.09	0.84-1.41
Intermediate non manual worker	1.01	0.84-1.22	1.03	0.80-1.32
High non manual worker	0.91	0.75-1.11	0.97	0.74-1.27
Own entrepreneur	1		1	
Income				
0-149			**1.67**	**1.42-1.94**
150-260			**1.47**	**1.27-1.71**
260+			1	
Education level				
Primary school or similar			0.95	0.77-1.18
Upper secondary school or similar			0.87	0.76-1.00
University or similar			1	
Age				
18-24			0.56	0.42-0.74
25-44			1.00	0.88-1.14
45-84			1	
Marital status				
Married			1.24	1.09-1.42
Unmarried			**1.92**	**1.64-2.25**
Divorced			1.51	0.92-2.47
Widow			1	
Alcohol consumption				
No			0.89	0.72-1.10
Yes			1	
Social support				
No			0.48	0.40-0.57
Yes			1	
Work demand				
No			0.77	0.66-0.90
Yes			1	
Work control				
No			0.87	0.73-1.05
Yes			1	

*All analyses are adjusted for income, education level, age, marital status, alcohol consumption, social support, work demand and work control in model 2

The odds ratio of depression among manual workers declined from 1.38 (1.15-1.66, 95% CI) to 1.15 (0.89-1.47 95% CI) and the statistical significance disappeared. This may indicate that

some of the variables introduced in the multivariate analysis may mediate the observed relationship.

In Model 2, women with low-income (annual income less than 260 TSEK) and unmarried women experienced higher risks of depression. Income is a well-established health determinant and the relationship between economic hardship and depression/mental health is well known [2,4,7,8]. On the other hand, marital status has shown a significant association with depression in previous studies, indicating that those being divorced, separated, widows and not married are more likely to have a depression in comparison to those being married [21]. However, other studies have found high odds for depression among divorced and widowed women compared to married and single women [10]. In this study, compared to widows, unmarried women had odds of 1.92 (1.65-2.25 95% CI). It is suggested that the economic context after separation or divorce might be one possible explanation and similar results have been found in a cross-sectional study in Sweden [22]. In this thesis it was not possible to know whether the unmarried women were result of separation of common law unions (which are common in Sweden) or women who never married.

Social support was not statistically associated with depression, women who had no social support had lower odds of experiencing depression. This is contrary to previous research which has found that social support played an important role in many health outcomes and major depression among women [23, 24]. Thus it is likely that the social support received from family and friends (the type captured by the survey) did not affect occupationally related depression.

This thesis has a number of strengths, has good validity, sensivity and specificity since the present study used secondary data from SCPHS 2006. SCPHS was carried out by Statistics Sweden on behalf of Stockholm County Council and Karolinska Institute. Furthermore cross-sectional surveys are time consuming and costly, and by extracting existing data it can be avoided. Regarding depression the respondents had to have been diagnosed one or several times by a doctor in order to be included as having a depression. This ensures good quality information. However, there are some caveats: (1) the study is based on a cross-sectional design thus, the temporal relationship between explanatory and outcome variable cannot be explored (causality); (2) the survey had a non-response rate of 39% but it is unlikely to have affected the results in this thesis as the survey have been deemed sufficient according the Statistics Sweden and Karolinska Institute [15].

5. Conclusion

The results of this thesis indicated that there was a relationship between socioeconomic status (measured by occupation) and depression among women in Stockholm County. In addition, the study found that the relationship was to some extent explained by the women income and marital status. However, further studies are needed to further investigate the relation between socioeconomic position (e.g. education and income) and depression among women in the Swedish population but particularly in Stockholm County.

6. References

1. World Health Organization. The World health report: 2001: Mental health: new understanding, new hope. Geneva: World Health Organization; 2001.

2. World Health Organization. Promoting Mental Health: Concepts, emerging evidence, practice. Geneva: World Health Organization; 2005

3. Grzywacz JG, Dooley D. "Good jobs" to "bad jobs": Replicated evidence of an employment continuum from two large surveys. Social Science & Medicine 2003;56:1749-60.

4. Singh-Manoux A, Adler NE, Marmot MG. Subjective social status: its determinants and its association with measures of ill-health in the Whitehall II study. Social Science & Medicine 2003;56:1321-33.

5. Adler A, Singh-Manoux JS. Social status and health: A comparison of British cicilservants in Whitehall-II with European- and Africans in CARDIA. Social Science & Medicine 2008;66:1034-45.

6. Wieclaw J, Agerbo E, Mortensen PB, Bonde JP. Occupational risk of affective and stress-related disorders in the Danish workforce. Scandinavian Journal of Work, Environment & Health 2005;31(5):343-51.

7. Lahelma E, Laaksonen M, Martikainen P, Rahkonen O, Sarlio-Lähteenkorva S. Multiple measures of socioeconomic circumstances and common mental disorders. Social Science & Medicine 2006;63:1383-99.

8. Molarius A, Berglund K, Eriksson C, Eriksson HG, Lindén-Boström M, Nordström E, Persson C, Sahlqvist L, Starrin B, Ydreborg B. Mental health symptoms in relation to socio-economi conditions and lifestyle factors: A population-based study in Sweden. BMC Public Health 2009;9:302.

9. Lorant V, Deliége D, Eaton W, Robert A, Philippot P, Ansseau M. Socioeconomic inequalities in depression: A meta-analysis. American Journal of Epidemiology 2003;157:98-112.

10. Almeida-Filho N, Lessa I, Araújo MJ, Aquino E, James SA, Kawachi I. Social Inequality and depressive disorders in Bahia, Brazil: Interactions of gender, ethnicity, and social class. Social Science and Medicine 2004;59:1339-53.

11. Deyessa N, Berhane Y, Alem A, Högberg U, Kullgren G. Depression among women in rural Ethiopia as related to socioeconomic factors: A community-based study on women in reproductive age groups. Scandinavian Journal of Public Health 2008;36(6):589-597,

12. Stockholm County Council. Stockholm County Council in brief. 2010-09-01

13. Statistics Sweden. Folkmängd i riket, län och kommuner 31 december 2009 och befolkningsändringar 2009 (korrigerad 2010-03-26). [Population in the country, counties and municipalities 31 of December 2009 and population changes 2009 (corrected 2010-03-26).]

14. Järleborg A. En översiktlig beskrivning av folkhälsoenkät 2006, version 1. [Synopsis of Public Health Survey 2006, version 1]. Stockholm: Department of Epidemiology, Stockholm County Council; 2006.

15. Statistics Sweden. Hälsoenkät 2006: en undersökning om hälsa och levnadsförhållanden i Stockholms län: teknisk rapport, utkast. [Health Survey 2006: a survey about health and living conditions in Stockholm County: technical report, draft]. Stockholm: Survey Unit, Statistics Sweden; 2007.

16. Galobardes B, Lynch J, Smith GD. Measuring socioeconomic position in health research. British Medical Bulletin 2007;81-82:21-37.

17. Lynch J, Kaplan G. Socioeconomic position. In: Berkman LF, Kawachi I. (eds.) Social Epidemiology. New York: Oxford University Press; 2000, pp13-35.

18. Statistics Sweden. Yrkesklassificering I FoB 85 enligt nordisk yrkesklassificering (NYK) och socioekonomisk indelning (SEI) [Occupation classification in FoB 85 according to the Nordic occupation classification (NYK) and socioeconomic classification (SEI)]. Stockholm: Statistics Sweden; 1989.

19. Statistics Sweden. SUN 2000: Svensk utbildningsnomenklatur. Standard för klassificering av svensk utbildning [SUN 2000: Swedish education nomenclature. Standard for classification of swedish education]. Stockholm: Statistics Sweden; 2000.

20. SPSS Inc Advanced Statistics 11.0. Chicago: SPSS Inc; 2010

21. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, et al. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). Journal of the American Medical Association 2003;289:3095-3105.

22. Lindström, M. Marital status, social capital, material conditions and self-rated health: A populations-based study. Health Policy 2009;93:172-179.

23. Kendler KS, Myers J, Prescott CA. Sex differences in the relationship between social support and risk for major depression: A longitudinal study of opposite-sex twin pairs. American Journal of Psychiatry 2005;162:250-256.

24. Lofors J, Sundquist K. Low-linking social capital as a predictor of mental disorders: A cohort study of 4.5 million Swedes. Social Science & Medicine 2007;64:21-34.