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Social inequality in the prevalence of depressive disorders

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Abbreviations:

ACT = Anatomical Therapeutic Chemical

CI = Confidence Interval

DDD = Defined Daily Dose

DKK = Danish Crowns

DSM-IV = Diagnostic and Statistical manual, 4th revision

GHI = Gross household income

ISCED = International Standard Classification of Education

MDD = Major depressive disorders

MDI = Major Depression Inventory

OR = Odds ratio

SEP = socio-economic position

Abstract

Background: Uncertainties exist about the strength of the relation between socio-economic position and depressive disorders. The aim of this study was to investigate the association between education, occupation, employment and income and depressive disorders measured as minor and major depression as well as antidepressant prescriptions.

Methods: Data were collected from a Danish cross sectional study collected year 2000, comprising 9254 subjects, 55% women, and aged 36-56 years. We used register-based information on education, income and prescription.

Results: The prevalence of major depression DSM-IV algorithm was 3,3% among men and women, whereas minor depression and prescriptions revealed statistically significant higher prevalence among females. A social gradient was found for all depressive end-points with the strongest estimates related to major depressive disorder (MDD). The associations were as follows: MDD and low education odds ratio (OR) 2.38 (CI 95% 1.68 to 3.37), MDD and non-employment OR 11.67 (CI 95% 8.06 to 16.89), MDD and low income OR 9.78 (CI 95% 6.49 to 14.74). Education only explained a minor part of the association between non-employment and depressive disorders and no associations were found between education and prescription. This indicates a strong two-way association between depression and non-employment, low-income, respectively.

Conclusion: We found a social gradient in depressive disorders regardless of socio-economic position being measured by education, occupation, employment or income. Severe socioeconomic consequences of depression are indicated by the fact, that the associations with non-employment and low income were much stronger than the association with low education.

Keywords: depressive disorders, socioeconomic indicators, inequality, cross-sectional study, MDI-score

Introduction

Depression is the leading cause of disability and is projected to become the second leading cause of the global burden of disease (DALYs) by 2020 based on a prevalence of 2.5% .[1] The prevalence rates of major depressive disorder (MDD), however, are difficult to estimate. A European study showed that according to DSM-IV the lifetime prevalence of MDD was 12.8% and 12-month (having had an episode in the past year) was 3.9%.[2] A Canadian review found the pooled 1-year prevalence of MDD according to “assumed” DSM-IV to be 4.1%, whereas life time prevalence was 6.7%.[3] Studies reporting 1-year and lifetime sex-specific rates for MDD, consistently demonstrated rates for women that were 1.5-2.5 fold higher than for men.[2-5] However, a Danish study estimated the prevalence of MDD to be 3-4% for both sexes, whereas a statistically significant sex-difference was found only related to minor depression.[6]

Uncertainties also exist about the relation between socio-economic position (SEP) and depressive disorders. Whereas low SEP is generally associated with higher psychiatric morbidity, the association between depression and SEP has been less clear cut. In a recent meta-analysis 35 of 51 prevalence studies showed statistically significant elevated odds of depression among deprived people, whereas five studies had non-significant odds ratios below 1. The meta-analysis indicated that people in the lowest SEP (measured by different indicators) compared to the highest had increased odds ratio of prevalent MDD assessed by different types of instruments (OR=1.81, $p<0.001$), the odds of incident MDD was (OR=1.24, $p=0.004$) whereas lower SEP individuals were much more likely to persist in depression for duration more than 1 year (OR=2.06, $p<0.001$). The meta-analysis also showed that inequalities were greater for income than for education.[7] A study from the US showed that the 12-months risk of MDD among unemployed was OR 2.2 (CI 95% 1.6 to 3.0) but among retired 0.9 (CI 95% 0.6 to 1.4).[8] The Whitehall study showed that age adjusted RII (relative index of inequality) of household income on self reported depressive symptoms (GHQ) was 2.30 (CI 95% 1.67 to 3.17) among men and 3.36 (CI 95% 2.04 to 5.52) among women.[9] A Danish study illustrated that prescription of antidepressant increased by age and was higher among females, low-educated, unemployed, low-income groups and singles.[10]

In general, studies on SEP and health select education, employment, occupation or income as measurement of SEP and use this one as proxy for SEP thus neglecting the others. Nonetheless, the indicators are not interchangeable. Each indicator reflects common impacts of a general social stratification in a specific society as well as different dimensions specific to each indicator.[11-15] The different indicators have causal and mediating relationships with each other. The health effect of education depends on which types of occupations are open to individuals with that type of education and the effect of occupation depends, among other things, on the income of the occupation and the individual.[16] Longterm illness are further likely to have impact on both employment and income. The assumed causal relationship between the indicators is depicted in Figure 1.

Figure 1 Pathways between socioeconomic determinants of health

The results presented above differ in strength of the association between depression and SEP. One reason might be that the relationship between MDD and SEP has hitherto been sparsely examined in studies using comparable definitions of MDD and indicators of SEP. Consequently, the nature and underlying causes of social inequality in depression remains unclear[17,18] The use of different indicators of SEP in the same study might therefore contribute to the elucidation of the strength of the association between depression and SEP. Generally, few studies have addressed the causal relationship between the various social indicators and health.[16,19] To our best knowledge no studies have explicitly examined the confounding or mediating effect of education and income on the association between occupational group and depression. This cross-sectional study using a validated rating and register-based information on SEP as well as prescription of antidepressants aims at 1) investigating whether there is a social gradient in the prevalence of depression and 2) evaluating the role of education and income in confounding/mediating the expected effect of employment and occupation on prevalent depression.

Material and methods

Study Population

The study population is extracted from a ten percent register run by The Institute of Local Government Studies in Denmark (AKF). This longitudinal register comprises 10% of the Danish population aged 15 years and older by 1. January 1981, N = 408 000. The Ten Percent Register has been updated annually with deaths and migrations, as well as a new cohort of 15-year-olds to keep it representative of the Danish population each year. The register includes data on country and date of birth, sex, marital status, household structure, education, occupation, employment and income.

From this ten percent register was extracted a randomly selected group of adults aged 40 and 50 years, respectively, by October 1st, 1999, (n=11 082) as well as a number of persons (n=4145) aged 36 to 54 years old by October 1st 1999, characterised by being unemployed for more than 70% of the time during the previous three years October 1996-1999. This group constitutes the Danish Longitudinal Study on Work, Unemployment and Health. The data included in this study is the baseline data.

Data collection

In March 2000 the extracted study population was sent a postal questionnaire comprising variables on physical and mental health, demographic and socioeconomic factors, occupational environment, social relations, health behaviours and depression. The response rate was 69% among the two cohorts of adults aged 40 and 50 years and 55% among the cohort of long-term unemployed resulting in a study population of 9,870 subjects.[20] A total of 616 were excluded due to lack of information on depression (DSM-IV), education, occupation, employment and income, resulting in a study population including 9254 subjects, 55% women. The study population was linked to the registers with prescriptions in Statistics Denmark.

Measures of socio-economic position

The questionnaires had a high proportion of missing information on education and income. Information on education and income for each study participant and his or her cohabitant was therefore obtained from Registers for year 2000. *Education* was classified in three categories

according to the International Standard Classification of Education (ISCED)-system (UNESCO 1997); (1) up to 10 years of education (ISCED level 0-2), (2) 11-12 years of education (ISCED level 3), (3) 13 and more years of education and (ISCED level 4-6).

Employment and occupation

Information on employment and occupation was obtained from the questionnaire, where participants had to write their position at work. Occupational groups were coded into social class I-V in accordance with the standards of the Danish National Institute of Social Research, which is similar to the British Registrar General's Classification I-V. For the sake of power the occupational group was divided into three groups according to employment. Employed were categorized into two groups as occupational group 1-3 (non-manual groups: executive managers, leading managers, and salaried employees), occupational group 4-5 (manual groups: skilled and unskilled workers). The third group called "non-employed" consists of unemployed and those outside the labour force (incl. disability pension). Self-employed, employed without specific occupation and students were categorized based on their ISCED-coding. Those with 13+ years of education were classified as non-manual and those with up to 12 years of education as manual.

Income

Information on gross annual income was obtained from the Register of Income Statistics for each study participant and his or her cohabitant. Household income comprises all income types subject to income taxation (wages and salaries, all types of benefits and pensions, net surplus or deficit, interest received and shared dividends). Information on cohabitation status was derived from Registers with socio-economic information in Statistics Denmark.

We calculated gross household income (GHI) as the sum of individual and cohabitants gross income. Mean GHI in Denmark year 2000 was 307 300 DKK per year.[21] The rate of exchange that year was 12 DKK for 1£.[21] Initial analyses of associations between prevalence of MDD and GHI divided into deciles showed that the association between income and MDD was almost the same for people with GHI between 175 000 and 450 000 DKK. From these results GHI was divided into three groups: <175 000, 175 000-450 000 & ≥ 450 000 DKK.

Other covariates

In the analyses we further adjusted for sex, cohabitation, dichotomised as living alone or cohabiting, age as continuous variable, cohort of origin and ethnicity categorized as native born Danes, immigrants from western countries, immigrants from non-western countries.

End-points - Measurement of depression

End-point was depression defined in three different ways:

Firstly, from the survey depression was measured with the 'Major Depression Inventory' (MDI), which has been validated at clinical and population levels.[22-24] The inventory consists of 10 items, of which three are core symptoms, that cover the ICD-10 as well as the DSM-IV diagnosis of MDD. MDI assesses information on depressive symptoms with a continuous duration of at least 2 weeks. According to the DSM-IV algorithm, five of ten symptoms including at least one core symptom, has to be present. MDD is constructed by use of the algorithm and corresponds to a score > 25 points. [22]

Secondly, also from the survey minor depression was defined as a MDI-score ≥ 15 to 25 points, compared to those with a score < 15 points. Those with a score > 25 points, equal to 372 individuals, were excluded from this analysis. We chose these cut-off points, because studies have shown, that MDI-score < 13.3 points equals no depression,[23] and 25 MDI-scores is very close to the DSM-IV algorithm.

Thirdly, depression was measured by means of prescription of anti-depressants. Since 1994 all prescribed antidepressants, picked up at Danish pharmacies including the date of prescription and the Defined Daily Dose (DDD), have been registered in The Medicinal Product Statistics.[25] Cases were coded according to the Anatomical Therapeutic Chemical (ATC) classification system[26] covering prescriptions of all antidepressants (ATC-code N06A). The use of antidepressants was defined as the dispensing of more than 179 DDD of any combination of different antidepressant, which approximately indicates a continuous treatment, for at least six months. We used information for year 2000.

Statistical modelling

Odds ratios with 95% confidence intervals (95% CI) were calculated using logistic regression modelling. We initially analysed the effect of age by including age as a continuous as well as a squared variable. Also, initially, analyses were carried out separately for women and men. In a second series of models, the covariates sex, age, ethnicity, cohort of investigation and cohabitation were included as potential confounders. In a third series of models, we further adjusted for one and two indicators of SEP. All covariates were tested for an interaction with SEP and depressive disorders by means of the likelihood ratio test. We found no interaction defined as departure from multiplicativity, neither in the pooled data, nor in sex stratified analyses. The only exception was between sex and employment and income, respectively, on minor depression. (Likelihood-ratio test for interaction between sex and employment, $p=0.003$, between sex and income, $p=0.006$) According to the Bonferroni test the result is insignificant. Consequently, since the associations were similar for men and women we did not stratify the analyses by sex. Statistical analyses were performed using STATA for Windows version 9.1.[27]

Results

The study population was, as shown in table 1, characterized by inequalities in unadjusted prevalence of depression according to education, occupation and employment, income, cohabitation and ethnicity. Patterns were similar for both sexes and regardless of depression being measured by DSM-IV algorithm, minor depression or antidepressants. The exception was the absence of a gradient across education on prescription. For MDD the prevalence was 3.3% among both men and women, whereas a sex-difference was seen for minor depression with 6.5% among men and 8.1% among women ($p=0.004$) and for antidepressants with a prevalence of 1.9% among men and 3.7% among women ($p<0.001$).

Table 1 Baseline characteristics of 4137 men and 5117 women in the Danish Longitudinal Study on Work, Unemployment and Health. Prevalence data

	Males				Females			
	N= 4137	MDD from DSM-IV algorithm %	MDI 15-25 points %	Antidepressan t, Σ DDD>6 months %	N = 5117	MDD from DSM-IV algorithm %	MDI 15-25 Points %	Antidepressan t, Σ DDD>6 month %
Employment £								
Occupation grp 1-3	1917	1.0	3.0	1.3	1942	1.0	4.2	2.6
Occupation grp 4-5	1534	2.0	4.6	23 1.5	2007	1.6	6.9	2.7
Non-employed	686	12.4	22.5	33 4.8	1168	10.4	17.6	7.3
Totally	4137	3.3	6.5	80 1.9	5117	3.4	8.1	3.7
Education								
Isced \geq 13 yrs	926	2.5	3.3	2.3	1228	1.8	4.7	3.8
Isced 11-12 yrs	2188	2.5	6.0	1.6	2433	2.9	7.4	3.5
Isced \leq 10 yrs	1023	5.6	10.6	2.4	1456	5.5	12.2	4.1
Gross household yearly income								
> 450 000 DKK	2212	1.2	2.8	1.3	2600	1.1	5.4	2.6
175-450 000 DKK	1507	3.7	9.0	2.2	1990	4.6	9.2	4.2
\leq 175.000 DKK	418	12.7	19.0	4.3	527	9.7	18.5	7.4
Cohabitation								
Cohabiting	2795	2.4	4.9	1.6	3502	2.5	6.9	3.4
Living alone	1342	5.1	9.9	2.6	1615	5.3	10.7	4.4
Ethnicity								
Danes	3823	2.9	5.6	2.0	4824	3.2	7.8	3.8
Immigrant from western countries	125	4.0	11.5	0.0	175	3.4	5.4	1.7
Immigrants from non-western countries	189	9.5	22.9	2.7	118	12	24	2.5

£ Occupational group 1-3 (non-manual groups: executive managers, leading managers, and salaried employees), occupational group 4-5 (manual groups: skilled and unskilled workers).

DDD = Defined Daily Dose, DKK = Danish Crowns DSM-IV = Diagnostic and Statistical manual, 4th revision ISCED = International Standard Classification of Education, MDD = Major depressive disorders, MDI = Major Depression Inventory

Table 2 showed a statistically significant social gradient in the prevalence of depression, adjusted for sex, age, ethnicity, marital status and cohort, according to education, occupation, non-employment and income. The pattern was similar for the three outcomes with the strongest association related to non-employment and income. In model a) it was shown that the strong association with employment and income persist even after adjusting for the confounding effect of education. In model b) it was indicated that the potential effect of education on the other hand partly is mediated through employment. Model c) illustrated that in the fully adjusted model among people with MDD the associations decreased considerably for education, but not for non-employed and low income people, indicating that depression also has a potential effect on non-employment and low income. The pattern was similar, but less pronounced among people with minor depression and prescriptions. Regarding anti-depressant prescription the social gradient in education was significantly reversed in the fully adjusted model.

Table 2 Odds ratios (OR) and 95% CI of major and minor depression and anti-depressive prescriptions by SEP measured by education, employment and income, respectively, in the Danish Longitudinal Study on Work, Unemployment and Health

	Major Depressive Disorder defined by Major Depression Inventory, DSM-IV algorithm							
	Simple model*		Multivariate ^a		Multivariate ^b		Multivariate ^c	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Education								
Isced ≥ 13 yrs	1				1		1	
Isced 11-12 yrs	1.26	0.88-1.78			0.86	0.59-1.26	0.84	0.58-1.23
Isced ≤10 yrs	2.38	1.68-3.37			1.27	0.87-1.86	1.16	0.79-1.70
Employment £								
Occupation grp 1-3	1		1				1	
Occupation grp 4-5	1.69	1.13-2.52	1.64	1.06-2.53			1.41	0.91-2.19
Non-employed	11.67	8.06-16.89	10.89	7.33-16.21			7.56	4.97-11.49
Gross household income pr year. DKK								
> 450 000	1		1				1	
175-450 000	3.48	2.51-4.83	3.16	2.26-4.40			2.10	1.48-2.96
≤ 175 000	9.78	6.49-14.74	8.45	5.56-12.84			2.92	1.86-4.58
Minor depression defined by MDI-scale point 15-25								
Education								
Isced ≥ 13 yrs	1				1		1	
Isced 11-12 yrs	1.64	1.28-2.11			1.33	1.02-1.75	1.32	1.01-1.74
Isced ≤10 yrs	2.72	2.11-3.51			1.92	1.44-2.55	1.83	1.37-2.43
Employment £								
Occupation grp 1-3	1		1				1	
Occupation grp 4-5	1.57	1.26-1.97	1.28	1.00-1.64			1.20	0.94-1.54
Non-employed	5.43	4.29-6.87	4.40	3.42-5.66			3.64	2.78-4.74
Gross household income pr year. DKK								
> 450 000	1		1				1	
175-450 000	1.97	1.61-2.41	1.73	1.41-2.12			1.43	1.16-1.76
≤ 175 000	4.17	3.14-5.54	3.53	2.65-4.69			1.89	1.38-2.57

Prescriptions of Anti-depressants, Σ DDD > 6 months

Education

Isced \geq 13 yrs	1		1		1	
Isced 11-12 yrs	0.83	0.61-1.12	0.61	0.43-0.87	0.60	0.41-0.87
Isced \leq 10 yrs	1.02	0.74-1.43	0.64	0.43-0.93	0.60	0.43-0.86

Employment \pounds

Occupation grp 1-3	1		1		1	
Occupation grp 4-5	1.15	0.83-1.59	1.47	1.01-2.13	1.37	0.94-2.00
Non-employed	3.90	2.81-5.41	4.74	3.29-6.83	3.84	2.60-5.68

Gross household income pr year. DKK

> 450 000	1		1		1	
175-450 000	1.77	1.32-2.37	1.84	1.36-2.50	1.46	1.07-1.99
\leq 175 000	3.81	2.49-5.83	4.00	2.58-6.21	1.95	1.21-3.14

* Odds ratios (OR) are in all analyses adjusted for sex, birth year, cohabitation, cohort and ethnicity

a Adjusted for education

b Adjusted for employment

c Adjusted for education + employment + income

\pounds Occupational group 1-3 (non-manual groups: executive managers, leading managers, and salaried employees), occupational group 4-5 (manual groups: skilled and unskilled workers).

DDD = Defined Daily Dose, DKK = Danish Crowns, DSM-IV = Diagnostic and Statistical manual, 4th revision, ISCED = International Standard Classification of Education, MDD = Major depressive disorders, MDI = Major Depression Inventory

As pointed out in table 3 the OR of depression was almost similar for manual versus non-manual employees independent of the cut-off point on the MDI-scale, whereas among non-employed people the relative estimates increased with severity of depression. This indicates that the two-way causal relationship between employment and depression not only exists for the occurrence of depression, but that the association is particularly strong with severe depression.

Table 3. Odds ratios (OR) and 95% CI of depression at different cut-off points at the MDI scale by employment in the Danish Longitudinal Study on Work, Unemployment and Health.

		Occupational group 1-3 £	Occupational group 4-5 £	Non-employed	
		OR*	(95% CI)	OR *	(95% CI)
MDI-scale 15-20	1	1.59	1.21-2.08	4.83	3.63-6.44
MDI-scale 15-25	1	1.57	1.26-1.97	5.43	4.29-6.87
MDI-scale 15+	1	1.64	1.35-1.99	7.72	6.35-9.41
MDI-scale 20+	1	1.65	1.28-2.12	8.89	6.96-11.36
DSM-IV	1	1.69	1.13-2.52	11.67	8.06-16.90
MDI-scale 25+	1	1.80	1.28-2.53	11.74	8.52-16.19
MDI-scale 30+	1	1.91	1.18-3.10	14.53	9.34-22.60

- All analyses are adjusted for sex, birth year, cohabitation, cohort and ethnicity

£ Occupational group 1-3 (non-manual groups: executive managers, leading managers, and salaried employees), occupational group 4-5 (manual groups: skilled and unskilled workers).

DSM-IV = Diagnostic and Statistical manual, 4th revision, MDD = Major depressive disorders, MDI = Major Depression Inventory

Discussion

Our results showed that the 2-week point prevalence of MDD was 3.3% for both sexes, whereas minor depression and prescriptions revealed statistically significant higher prevalence among females. We found a social gradient in depressive disorder whichever the social indicator was education, occupation, employment or income. The association with non-employment and income was much stronger than the association with education, and the association with occupation was particularly weak. If we assume that a strong association indicates depression both as a cause and an effect of SEP, then the stronger association with non-employment and income indicates that depression not only is caused by but also causes non-employment and low-income

Comparisons to other results

Our prevalence is in accordance with another Danish study showing a prevalence of MDD at 3%. [22] Contrary to studies outside Denmark we only found a sex-difference related to minor depression and anti-depressants. Part of the reason for this might be that our measure of MDD is self-reported and from a population survey and thus less influenced by sex-differences in health care utilisation and clinical judgement. [6] The prevalence rates of minor depression were statistically significantly higher among employed women, compared to employed men ($p < 0.001$), but among unemployed the prevalence was higher among men compared to women, but statistically insignificant ($p = 0.02$). Whether this indicates that men are more susceptible to non-employment needs some further studies.

Since the social gradient in depression has hitherto been controversial we carefully studied the association between different indicators of SEP and three definitions of depression. Similar to other studies we found stronger associations related to income compared to education. [7,8] These studies, however, did not adjust for the other socio-economic indicators. We found, that education only slightly confounded the associations with occupation and income, respectively. Another noteworthy point was that the association with income remained significant after adjusting for employment and education. We ran the analyses separately including only employed people. In the simple model the association between income $\leq 175\ 000$ DKK and MDD was OR 3.03 (CI 95% 1.21 to 7.54). After adjustment for education and occupation the result was OR 2.72 (CI 95% 1.08 to 6.86). (Results not shown.) This fact may also indicate an effect of low income on depressive disorders, and/or that depression affects income even without measurable effects on employment. We used gross household income adjusted for cohabitation, instead of equivalised income. However, a Danish study showed that associations between income and myocardial infarction were independent of income indicator. [19]

As far as we know no other studies have compared the social gradients with different endpoints of depression. The fact that we found stronger estimates between education, non-employment and income, respectively, and MDD compared to prescription could indicate insufficient treatment among lower SEP and could be explained by the fact that lower income people are less likely to see a specialist compared to people with higher income. [28] In the analyses where we adjusted for all social indicators the association with education was strongly reduced and significantly reversed. This is partly a result of overadjustment, since income and non-employment is also a consequence of depression. The result might also show that the use of anti-depressant among low-educated was lower than their need. Defining social inequality in depression by means of antidepressant prescriptions might therefore be compared to

the DSM-IV algorithm underestimate the social gap in prevalence due to differential misclassification.[29]

Even though the majority of antidepressants are prescribed due to depression it has to be remembered that these drugs are also prescribed for other diseases.[30,31] A Norwegian study has shown that only a minority of patients with depression seeks treatment for this,[32] which indicates that antidepressant prescriptions as a measurement of depression should be used with great caution.

The group of minor depression might contain well-treated MDD patients, since decreasing MDI- points could indicate effect of treatment. We therefore tried to exclude people receiving anti-depressants. The results (not shown) remained almost unchanged, indicating differential susceptibility to severity of depression, as also shown in table 3.

Limitations

There are, however, limitations to the study. *Firstly*, the study was cross-sectional, which although asking for symptoms/behaviours during the past two weeks, cannot be used to predict whether non-employment and low income, respectively, are effects of or causing depressive disorders. *Secondly*, our information on depressive disorders was self-reported. However, we used a well validated questionnaire, tried different cut-off points and investigated the associations with prescriptions as well. Our results remained robust regarding significance. *Thirdly*, selection bias cannot be excluded if the prevalence of depressive disorders is higher among high-educated non-responders compared to high-educated responders. We compared prescriptions among responders and non-responders by means of The Medicinal Product Statistics. The results showed that the prevalence of prescriptions among high-educated responders was 3.2% compared to high-educated non-responders 2.6%, ($p=0.35$) indicating that this was not the case. Likewise is it possible that participants underreport their depressive disorders. One Whitehall study comparing the GHQ with responses to a standardized psychiatric interview has shown that this was the case among lower grade men with psychiatric disorder.[33] If this is the case then our results regarding depressive disorders are underestimated.

Conclusion

This cross-sectional study, using register-based information on income as well as valid MDD-point prevalence, found a social gradient in depressive disorder regardless of SEP being measured by education, occupation, employment or income. The association with non-employment and income was much stronger than the association with education, and the association with occupation was particularly weak. This might indicate a strong two-way causal relationship with employment and income.

What is already known

- There is a social gradient in psychiatric morbidity.
- Uncertainties exist about the strength of the relation between socio-economic position and depressive disorders.

What this study adds

- Regardless of whether we measure depression as major depression, minor depression

or use of anti-depressant we find a stronger association with non-employment and income than with education. This might indicate a strong two-way causal relationship with employment and income.

- The use of antidepressants is higher among high-educated compared to low-educated people.
- We found no gender difference in the prevalence of major depression
- A gender difference is found in minor depression with higher prevalence among employed women compared to employed men, but lower among non-employed women compared to non-employed men

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