EXPLANATIONS OF SOCIAL CLASS DIFFERENCES IN ALCOHOLISM AMONG YOUNG MEN

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Abstract—The aim of this study was to analyse the role of differences in alcohol consumption and other risk factors for alcoholism established in late adolescence, for later differences in the distribution of alcoholism between social classes among young men. Data on risk factors in childhood and adolescence, e.g. risk use of alcohol, was collected among 49 323 men, born 1949–1951, at conscription for compulsory military training 1969/1970. Data on socio-economic group was obtained from the 1975 census and data on alcoholism diagnoses from the national in-patient care register 1976–1983. Several risk factors for alcoholism, such as risk use of alcohol, psychiatric diagnosis at conscription, parental divorce, low emotional control and contact with police and child care authorities, seemed to be more common among those who were recruited to blue-collar occupations compared to those who were recruited to non-manual occupations. In multivariate analyses, taking the background variables into consideration, the increased relative risks among manual workers for alcoholism diagnoses, found in univariate analyses, diminished considerably. Several risk factors had a stronger effect on the outcome among unskilled workers compared with non-manual employees at medium or higher degree. It is concluded that risk factors for poor health established in late adolescence could explain much of the increased relative risk of alcoholism among young unskilled and skilled male workers in this study. © 1998 Elsevier Science Ltd. All rights reserved

Key words—social classes, health-related selection, alcohol consumption, alcoholism

INTRODUCTION

Alcohol related mortality was found to be more common among manual workers compared to non-manual employees in both sexes in Sweden 1981–1986 (Lundberg and Östberg, 1990) as well as in 1992 (Rosén, 1996). In Stockholm alcoholism diagnoses and alcohol related mortality were more common among manual workers in both sexes 1970–1984 (Romelsjö and Lundberg, 1996). Alcoholism diagnoses were also more common among Swedish male and female manual workers as compared to non-manual employees followed 1981–1983 at discharge from in-patient care (Hemmingsson et al., 1997a,b). Öjesjö found that the prevalence of alcoholism was higher among male manual workers compared to other socio-economic groups in a small Swedish municipality in 1976 (Öjesjö et al., 1983). One third of the mortality among young adults in Sweden is estimated to be due to alcohol (Haglund and Svanström, 1992). More than 40% of the mortality among Finnish men aged 20–50 yr in 1987–1993 was estimated to be alcohol related (Mäkelä et al., 1997).

Several studies have shown a link between unfavourable living conditions in childhood or adolescence and future ill-health (Macintyre, 1988; Andréasson et al., 1991; Power, 1991; Hawkins et al., 1992; Lundberg, 1993; Nyström-Peck, 1994). It has been suggested that a substantial part of social class differences in health could be attributed to differences in childhood environments (Power, 1991; Lundberg, 1993; Van de Mheen et al., 1997) but other authors suggest that circumstances in adult life, differing between socio-economic groups, could be more important in explaining socio-economic differences in health (Lynch et al., 1994; Rahkonen et al., 1997). Social class differences in health are also reported to be stronger when determined from achieved social class instead of social class of origin (Östberg and Vägerö, 1991; Lynch et al., 1994; Vägerö and Leon, 1994; Manor et al., 1997; Rahkonen et al., 1997). According to West (1991) this may be the consequence of a selection process at labour market entry, also including intergenerational social mobility, where individuals with increased risk for ill health end up in lower social strata.

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Increased general susceptibility has been proposed as one reason for the increased morbidity and mortality among manual workers (Cassel, 1976; Syme and Berkman, 1976). According to this theory a higher load of psycho-social stressors, regardless of other known risk factors, may explain why many diseases are more prevalent in lower social classes compared to higher. This general susceptibility could be caused by circumstances in adult life, differing between social classes (Vågerö, 1991).

In many countries, including Sweden, it is a major goal of health policy to reduce health differences between social groups. To fulfill this goal the risk factors linking social class to ill-health must be known. The aim of this study is to investigate to what extent individual risk factors, present when entering a socio-economic group may contribute to differences in the occurrence of alcoholism between socio-economic groups. We will examine the socio-economic distribution of alcohol misuse and other individual risk factors for alcoholism diagnoses among young men entering adult employment and estimate their importance for later differences in alcoholism diagnoses between socio-economic groups among the young men. The possible interactions between socio-economic group and risk factors established in late adolescence in the occurrence of alcoholism will also be considered.

The paper will address the following three questions:

1. Is the recruitment to socio-economic groups selective concerning known risk factors for alcoholism among young men?
2. Are there differences in relative risks of alcoholism between achieved socio-economic groups among young men? If so, could those differences be explained by differential recruitment, selective by risk factors for alcoholism, to socio-economic groups?
3. Are the effects of risk use of alcohol and other risk factors for alcoholism, the same in different socio-economic groups, i.e. is there an interaction between the factors determined at conscription and achieved socio-economic group?

METHODS

The study was based on data from a nation-wide survey of 49,323 young Swedish males, born 1949-1951, who were conscripted for compulsory military service in 1969-1970. The background of the Swedish conscription surveys and the variables included have been presented in detail elsewhere (Andréasson et al., 1988; Andréasson et al., 1991). Only 2-3% of all Swedish men are exempted from conscription, in most cases due to severe handicaps or congenital disorders. They accounted for 97.7% of all conscripts in 1969/70, the remaining 2.3% were born before 1949.

Potential risk factors during upbringing and adolescence (selection factors)

At conscription all men were asked to complete two questionnaires. The first concerned social background, behaviour and adjustment, psychological factors and health. The second dealt specifically with substance use, e.g. alcohol and tobacco smoking. All the conscripts were seen by a psychologist for a structured interview and assessment of intellectual capacity, social maturity, emotional control and a few other predetermined scales. The ratings of the psychologists were regularly checked for interrater reliability. All conscripts were seen by a physician who diagnosed any disorders according to the Swedish version of the ICD, 8th revision (ICD-8). Conscripts reporting or presenting psychiatric symptoms were seen by a psychiatrist and any diagnoses were also recorded according to ICD-8.

Ten variables from the examination at conscription were selected to be included in the analyses since they were previously known risk factors for the outcomes in this population (Andréasson et al., 1988; Andréasson et al., 1991; Andréasson et al., 1993; Upmark et al., 1997; Hemmingsson et al., 1997a,b).

Alcohol consumption in grams 100%/alcohol/week was calculated on the basis of answers to questions on frequency and average consumed volume of beer, wine and strong spirits. A composite variable, risk use of alcohol, included at least one of the following factors of problem drinking: consumption of at least 250 gr 100% alcohol/week, to have taken an eye-opener (“a hair of the dog”) during hangover, to have been apprehended for drunkenness or to have often been drunk (alternatives given in the questionnaire were “often”, “rather often”, “sometimes” and “never”).

An index of social network during adolescence was constructed using questions on relations to parents, feeling of insecurity in company with others, relation to school-mates, close relation to friends and difficulties in establishing contact with others. Those with two or more negative answers (20%) were considered to have a limited social network during adolescence.

The variable “emotional control” was assessed by a psychologists at conscription at five levels (1 and 2 formed the lowest 20% = exposed) as a summary assessment of mental stability, emotional maturity and tolerance for stress and frustration.

Information on parental divorce, collected at conscription, was used as an indicator of conflicts among family members (Hawkins et al., 1992).

Smoking in adolescence (at least 5 cigarettes/day) is associated with later use of alcohol and drugs (Torabi et al., 1993). The variable “contact with police and child care authorities” (at least once) indicates problem behaviour and is strongly related to
The psychometric tests performed included tests on general intellectual ability, verbal ability, visuospatial ability and technical reasoning and were ranked 1–9 where 1, 2 and 3 formed the lowest 20% (low ranking on the psychometric test) and 7, 8 and 9 formed the highest 20% (high ranking on the psychometric test). Fathers’ social group was classified in three groups (1 = proprietors and self-employed, 2 = other non-manual employees, 3 = manual workers).

Data on occupation and socio-economic group

Information on occupation for each conscript was obtained by record linkage with the National Population and Housing Census of 1975 held by Statistics Sweden. This census had a response rate of 99%. The occupations reported in the census 1975 were coded according to the Nordic modification of the three-digit International Standard Classification of Occupations. The classification into four different socio-economic groups was based on information on occupation: (1) unskilled workers, (2) skilled workers, (3) assistant non-manual employees and (4) non-manual employees at intermediate or higher level. Those not classified in a socio-economic group due to no occupation being reported were analysed in a separate group.

Data on alcoholism diagnoses

By means of personal identification numbers we performed record linkages with the Psychiatric Inpatient Care Register 1973–1983 from the National Board of Health and Welfare. In this register all hospital episodes with a psychiatric diagnoses were recorded for patients treated in any hospital (psychiatric as well as general) in Sweden. Diagnoses were recorded at discharge of the patient. In the follow-up we used alcoholism diagnoses (alcohol psychosis (ICD-8 291), alcoholism (ICD-8 303) and alcohol intoxication (ICD-8 980)) 1976–1983. From 1984 and onwards the register of psychiatric diagnoses was discontinued and not available for research.

Those who received an alcoholism diagnoses at conscription or in the in-patient care register 1973–1975 were excluded from the study population. Those who received a psychiatric diagnoses not related to alcoholism at conscription or in 1973–1975 were included in the study population and the variables were used to control for selection. The primary and the secondary diagnosis at any discharge during follow up 1976–1983 were used to identify an alcoholism diagnosis but the first alcoholism diagnosis was chosen for each individual.

Data analysis

For each socio-economic group in 1975 the proportion of men with a risk factor, reported at conscription, was calculated. The ratios between the proportions among unskilled workers and among intermediate/higher non-manual employees, with a 95% confidence interval (CI 95%), derived according to the test-based method, were also calculated.

The association between the risk factors (selection factors and socio-economic groups) and alcoholism diagnoses was calculated in both univariate and multivariate models using the logistic-procedure in the SAS computer package. Odds ratios were used as approximations of relative risks. In the multivariate models the relative risk associated with being in a particular socio-economic group in 1975 was estimated controlling for the effect of all other risk factors (the selection variables).

The interaction effect was calculated according to Rothman and the synergy index (SI) is reported. Synergistic interaction refers to a situation where two exposures are component causes in the same sufficient cause. If then some persons develop alcohol abuse only under the influence of both factors acting together (i.e. risk use of alcohol and low social class) synergistic interaction occurs. An interaction effect is proven by departure from additivity of absolute effects, i.e. the relative excess risk among those with combined exposure should exceed the sum of the relative excess risks for each of the component causes where those unexposed to both causes is used as reference category (Rothman, 1986; Hallqvist et al., 1996). Synergy may be identified in an epidemiologic study by the synergy index:

$$SI = \frac{RR(AB) - RR(A \overline{B})}{[RR(AB) - RR(A \overline{B})] + [RR(AB) - RR(A B)]}$$

where $\overline{A}$ denotes unexposed and $RR(A B)$ the relative risk among those exposed to both factors where $RR(\overline{A} B)$ is used as reference category ($RR = 1.0$). A value of the synergy index (SI) above 1.0 indicates more than additive interaction, i.e. synergy. A value of $SI = 2.0$ denotes a relative risk among those exposed to both factors twice as high as would be expected from additivity and implies that 50% of the disease occurrence is attributable to the interaction (Rothman, 1986).

A program developed in the SAS computer package for the calculations of SI with confidence intervals was used (Lundberg et al., 1996). Confidence intervals were calculated as proposed by Hosmer and Lemeshow (1992). Calculations of interaction were made with intermediate/higher non-manual employees used as reference category.
The relative risks, as well as the proportions with risk factors, for socio-economic groups, are calculated for those 42,262 conscripts who contributed full information concerning all the variables included in the multivariate model in Table 2.

**RESULTS**

**Health-related selection to socio-economic groups**

Several selection variables, i.e. risk use of alcohol, limited social network, low emotional control, parental divorce, getting a psychiatric diagnosis at conscription as well as during 1973–1975, smoking, having experienced contact with police and child care authorities, low ranking on psychometric test and having originated from the lowest social group, were more common among those who were to become manual workers than among those who were to become non-manual employees (Table 1).

### Table 1. Proportion with the risk indicators at conscription among those who were in 1975

<table>
<thead>
<tr>
<th></th>
<th>NE</th>
<th>USW</th>
<th>SW</th>
<th>ANME</th>
<th>NMHD</th>
<th>USW/NMHD (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk use of alcohol</td>
<td>14.7</td>
<td>15.3</td>
<td>15.6</td>
<td>8.4</td>
<td>6.2</td>
<td>2.5 (2.3–2.7)</td>
</tr>
<tr>
<td>Limited social network</td>
<td>12.5</td>
<td>11.5</td>
<td>9.5</td>
<td>9.5</td>
<td>9.1</td>
<td>1.3 (1.2–1.4)</td>
</tr>
<tr>
<td>Low emotional control</td>
<td>33.3</td>
<td>34.1</td>
<td>28.6</td>
<td>27.3</td>
<td>20.2</td>
<td>1.7 (1.6–1.8)</td>
</tr>
<tr>
<td>Parental divorce</td>
<td>11.5</td>
<td>10.2</td>
<td>9.2</td>
<td>8.4</td>
<td>5.9</td>
<td>1.7 (1.5–1.9)</td>
</tr>
<tr>
<td>Psych. dia. at conscription</td>
<td>15.4</td>
<td>14.3</td>
<td>10.5</td>
<td>9.7</td>
<td>6.3</td>
<td>2.3 (2.1–2.5)</td>
</tr>
<tr>
<td>Psych. dia. 73–75</td>
<td>3.4</td>
<td>1.1</td>
<td>0.9</td>
<td>0.4</td>
<td>0.3</td>
<td>3.7 (2.4–5.7)</td>
</tr>
<tr>
<td>Smoking</td>
<td>42.0</td>
<td>52.8</td>
<td>53.4</td>
<td>43.7</td>
<td>33.1</td>
<td>1.6 (1.5–1.7)</td>
</tr>
<tr>
<td>Contact with police or child care</td>
<td>28.4</td>
<td>32.2</td>
<td>33.5</td>
<td>20.9</td>
<td>16.8</td>
<td>1.9 (1.8–2.0)</td>
</tr>
<tr>
<td>Low ranking on psychometric test</td>
<td>11.9</td>
<td>27.6</td>
<td>23.7</td>
<td>8.0</td>
<td>3.1</td>
<td>8.9 (7.9–10.1)</td>
</tr>
<tr>
<td>High ranking on psychometric test</td>
<td>30.0</td>
<td>9.7</td>
<td>7.0</td>
<td>18.9</td>
<td>35.7</td>
<td>0.3 (0.3–0.3)</td>
</tr>
<tr>
<td>Fathers’ soc. gr. (=1)</td>
<td>30.4</td>
<td>12.3</td>
<td>9.2</td>
<td>21.6</td>
<td>26.2</td>
<td>0.5 (0.5–0.6)</td>
</tr>
<tr>
<td>Fathers’ soc. gr. (=2)</td>
<td>33.3</td>
<td>27.8</td>
<td>28.4</td>
<td>37.3</td>
<td>39.5</td>
<td>0.7 (0.7–0.7)</td>
</tr>
<tr>
<td>Fathers’ soc. gr. (=3)</td>
<td>36.3</td>
<td>59.9</td>
<td>64.4</td>
<td>41.1</td>
<td>34.3</td>
<td>1.7 (1.7–1.8)</td>
</tr>
</tbody>
</table>

Not employed (NE), Unskilled workers (USW), Skilled workers (SW), Assistant non-manual employees (ANME), Non-manual employees at medium or higher degree (NMHD) and the ratio between those proportions among USW and NMHD with 95% confidence interval (CI).

**Socio-economic differences in alcoholism diagnoses**

In the cohort 413 men with alcoholism diagnoses at discharge from in-patient psychiatric care (7 cases of alcohol psychosis, 398 cases of alcoholism and 8 cases of alcohol intoxication) were found among those who contributed full information concerning all the relevant variables. Considerable differences in risks were found between socio-economic groups in the univariate analyses, with the highest relative risks for those not employed, followed by unskilled workers. In the multivariate analyses, including all variables in the table, the increased relative risks for the lower socio-economic groups were considerably reduced (for unskilled and skilled workers the reduction was around 80%). But those who were not employed and unskilled workers, still showed significantly increased relative risks. Risk use of alcohol, low emotional control, parental divorce, a psychiatric

### Table 2. Risk indicators for alcoholism diagnoses in Register of diagnoses at discharge from inpatient psychiatric care related to alcoholism (n = 413). Univariate and multivariate analysis (logistic regression analysis) with 95% confidence interval (CI). In multivariate model 2 only those variables shown in the table are included in the model

<table>
<thead>
<tr>
<th></th>
<th>Univariate RR (95% CI)</th>
<th>Multivariate 1 RR (95% CI)</th>
<th>Multivariate 2 RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified in SEI*</td>
<td>7.6 (4.7–12.3)</td>
<td>3.4 (2.1–5.5)</td>
<td>3.5 (2.1–5.7)</td>
</tr>
<tr>
<td>Unskilled worker*</td>
<td>4.9 (3.0–7.7)</td>
<td>1.9 (1.2–3.1)</td>
<td>2.0 (1.2–3.2)</td>
</tr>
<tr>
<td>Skilled worker*</td>
<td>3.3 (2.1–5.4)</td>
<td>1.4 (0.9–2.3)</td>
<td>1.5 (0.9–2.4)</td>
</tr>
<tr>
<td>Non-manual low*</td>
<td>2.0 (1.1–3.6)</td>
<td>1.4 (0.8–2.6)</td>
<td>1.4 (0.8–2.6)</td>
</tr>
<tr>
<td>Risk use of alcohol</td>
<td>6.7 (5.5–8.1)</td>
<td>2.6 (2.1–3.3)</td>
<td>2.7 (2.2–3.4)</td>
</tr>
<tr>
<td>Limited social network</td>
<td>2.0 (1.5–2.5)</td>
<td>1.2 (0.9–1.6)</td>
<td>– (–)</td>
</tr>
<tr>
<td>Low emotional control</td>
<td>3.4 (2.8–4.2)</td>
<td>1.6 (1.2–2.0)</td>
<td>1.8 (1.4–2.2)</td>
</tr>
<tr>
<td>Parental divorce</td>
<td>2.9 (2.3–3.7)</td>
<td>1.6 (1.2–2.0)</td>
<td>1.6 (1.2–2.0)</td>
</tr>
<tr>
<td>Psych. dia. 1973–1975</td>
<td>12.5 (8.6–18.2)</td>
<td>3.8 (2.5–5.9)</td>
<td>4.0 (2.7–6.1)</td>
</tr>
<tr>
<td>Psych. dia. at conscription</td>
<td>3.8 (3.1–4.7)</td>
<td>1.2 (1.0–1.6)</td>
<td>– (–)</td>
</tr>
<tr>
<td>Smoking</td>
<td>4.2 (3.3–5.3)</td>
<td>2.2 (1.7–2.8)</td>
<td>2.2 (1.7–2.8)</td>
</tr>
<tr>
<td>Contact with police/child care</td>
<td>4.9 (4.0–6.0)</td>
<td>1.9 (1.5–2.4)</td>
<td>2.0 (1.5–2.5)</td>
</tr>
<tr>
<td>Low rank. psychomet. test**</td>
<td>2.8 (2.3–3.5)</td>
<td>1.6 (1.3–2.0)</td>
<td>1.7 (1.4–2.1)</td>
</tr>
<tr>
<td>High rank. psychomet. test**</td>
<td>0.3 (0.2–0.4)</td>
<td>0.5 (0.3–0.8)</td>
<td>0.5 (0.3–0.8)</td>
</tr>
<tr>
<td>Fathers’ social group = 2***</td>
<td>1.4 (1.0–2.0)</td>
<td>1.2 (0.8–1.7)</td>
<td>– (–)</td>
</tr>
<tr>
<td>Fathers’ social group = 3***</td>
<td>2.3 (1.6–3.2)</td>
<td>1.4 (1.0–2.0)</td>
<td>– (–)</td>
</tr>
</tbody>
</table>

* ref = intermediate or higher non-manual employees.
** ref = intermediate ranking on psychometric test.
*** ref = fathers social group = 1.
Social class differences in alcoholism among young men

Diagnosis 1973–1975, smoking, contact with police and child care authorities and low ranking on psychometric test showed considerably elevated relative risks in the multivariate analysis (Table 2). When only those variables, together with high ranking on psychometric test, were controlled for, the relative risk was reduced as much as when all variables were included (Table 2).

The variables that by themselves most reduced the risk differences between the socio-economic groups were low ranking on psychometric test followed by risk use of alcohol and contact with police and child care authorities.

Interaction between social class and the risk factors

No interaction between any of the selection factors and the socio-economic groups of skilled workers and assistant non-manual employees was found. Unskilled workers seemed to receive an alcoholism diagnosis more easily when simultaneously stating risk use of alcohol, limited social network, emotional control, smoking, contact with police and child care authorities and origin from the social class of manual workers (social group 3) (Table 3). 40–50% of the cases of alcoholism diagnoses among unskilled workers exposed to those conditions could be attributed to interaction between each of these variables and own social class. Those not employed seemed to be even more susceptible when simultaneously exposed to several of the selection factors (not shown). When all other potential risk factors in our study were controlled for in the analyses no significant interactions remained.

Discussion

In this longitudinal study we found evidence that several health-related factors, e.g. risk use of alcohol, were highly selective for recruitment to socio-economic groups among young men in the early 1970. At age 18–19, those young men who were to be found outside the labour market or in an unskilled manual position 5 yr later reported risk use of alcohol and showed other characteristics related to later abuse, more commonly than young men who were to end up in higher socio-economic strata. However, among young unskilled workers and particularly young men outside the labour market, these selection factors could not entirely explain the excess risk of alcoholism diagnoses.

The group classified as not employed is very heterogeneous. It consists of the unemployed, men who could not work because they were ill, men who could not work because they were alcoholics, but also men that were still studying. This may partly explain the considerable increased relative risk for alcoholism in this group.

Health related selection and the period of adult transition

Our findings indicate that, among young men, factors established before conscription are strongly related to alcoholism diagnoses during a period of 13 yr after conscription.

As we have shown in this study the likelihood of ending up in a certain social class seems to differ between individuals depending on background factors. The most important indicator of future social class was school achievement (estimated from the psychometric test result). This could indicate that adolescent life-styles to a great extent are based on school ability and reflect future social class. Glendinning et al. (1995) found that those with a negative attitude towards school at the age of 16, who most probably ended up as manual workers, drank more alcohol at the age of 18. This pattern is similar to that found in this study where those who ended up as manual workers reported the highest alcohol consumption. For the age-group considered there is a strong relation between education and social achievement (Jonsson and Mills, 1993). The contribution to social class differences in alcoholism from health related social mobility in our material will be discussed in a forthcoming paper.

Could belonging to a high socio-economic group be considered as a "protective environment"?

In this study manual workers had higher prevalences than non-manual employees of almost all risk factors for alcoholism. Those risk factors, established in late adolescence, explained a major part of the differences between socio-economic

Table 3. Relative risk of alcoholism diagnoses among unskilled workers (US) and non-manual employees at medium or higher degree in different combinations of risk indicators, analysed one at a time, with 95% confidence intervals (CI 95%). Significant interaction according to SI-calculations, with 95% confidence intervals (CI 95%)

<table>
<thead>
<tr>
<th>Risk use of alcohol</th>
<th>Non-manual employees and unexposed to SI</th>
<th>Non-manual employees and exposed to 0.9</th>
<th>Unskilled workers and unexposed to 0.9</th>
<th>Unskilled workers and exposed to 0.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>6.7 (2.6–17.4)</td>
<td>4.1 (2.3–7.1)</td>
<td>20.9 (11.8–37.0)</td>
<td>2.3 (1.2–4.5)</td>
</tr>
<tr>
<td>Limited social network</td>
<td>1.0–</td>
<td>1.6 (0.5–5.4)</td>
<td>4.5 (2.7–7.6)</td>
<td>8.9 (5.0–15.8)</td>
</tr>
<tr>
<td>Low emotional control</td>
<td>1.0–</td>
<td>3.2 (1.3–7.8)</td>
<td>4.4 (2.3–8.4)</td>
<td>12.2 (6.5–22.9)</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.0–</td>
<td>18.3 (4.3–79.1)</td>
<td>12.9 (3.1–54.2)</td>
<td>50.4 (12.5–203.9)</td>
</tr>
<tr>
<td>Contact with police or child care</td>
<td>1.0–</td>
<td>6.1 (2.5–14.7)</td>
<td>5.1 (2.6–10.4)</td>
<td>17.3 (8.7–34.3)</td>
</tr>
<tr>
<td>Fathers’ social group</td>
<td>1.0–</td>
<td>1.0 (1.0–1.0)</td>
<td>3.3 (1.8–6.2)</td>
<td>6.0 (3.4–10.6)</td>
</tr>
</tbody>
</table>

* ref = fathers social group 1 or 2.
groups concerning alcoholism diagnoses. We also found interactions between low social class and several risk factors in relation to alcoholism diagnoses. Thus a higher socio-economic group seemed to protect against the consequences of risk use of alcohol and other risk factors.

We also performed analyses where the significant interactions were reanalysed in multivariate models where all other potential risk factors in our study were controlled for. In these analyses no significant interactions remained. A possible explanation for this would be a higher correlation of risk factors in lower social strata compared to higher. If so, e.g. smoking, in an interaction analysis with social class, would become “contaminated” by other risk factors and the interaction with smoking would appear more marked than is actually true for smoking alone. Nevertheless, our findings, on the one hand, support an increased susceptibility to several risk factors for alcoholism diagnoses among manual workers and, on the other hand, indicate the background to this susceptibility. The potential risk factors examined in fact describe the content of social class quite well in terms of risk factors for alcoholism diagnoses among young men. Our results thus may suggest that an increased susceptibility to alcoholism diagnoses among young men in lower social classes is a result of an accumulation of risk factors.

Our findings show that adult social class position, also in Sweden, is largely determined from school achievement (estimated from psychometric test in adolescence). Some of the risk factors in this study, such as risk use of alcohol and smoking as reported at conscription, also seem to be related to a social pattern established early (Glendinning et al., 1995; Aarnio et al., 1997). Therefore early educational achievement could act as a gateway to both high social class and a healthier life-style (West, 1991; Vägerö, 1992). From a public health point of view there is a great need to understand the mechanisms behind this early established covariation between different life trajectories, with differences in childhood environment, education and work environment and health hazards.

CONCLUSION

Several risk factors for later alcoholism diagnoses was found among young men who were recruited to manual occupations, as well as those not employed. A pronounced social class gradient in alcoholism diagnoses was also found. The social class differences diminished by 80% when controlling for the risk factors established in late adolescence, but unskilled workers and those not employed still showed significantly increased relative risks. The results suggest that a substantial part of socio-economic differences in alcoholism diagnoses among young men can be attributed to circumstances in childhood and adolescence. An increased susceptibility to several of these risk factors among young unskilled workers as well as among those not employed is suggested to be due to an accumulation of risk factors among members of those groups.

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