

Abstract

Background: There is a lack of knowledge about how alcohol use relates to health and well-being in working populations.

Aims: To determine how levels of alcohol consumption relate to psychological distress, somatic complaints, sleep, and job satisfaction in the Norwegian workforce

Methods: Survey questionnaire data from a probability survey comprising 1608 (response rate 32%) Norwegian employees. Differences in health and well-being between levels of alcohol consumption was examined with analysis of variance (ANOVA).

Results: 19.8% of the sample were abstainers, 71.5% were low to moderate alcohol users, 6.3% were moderate to high users, and 2.3% were risky users. Adjusting for age, gender, and tobacco use, employees with risky alcohol use reported significantly higher levels of psychological distress and lower job satisfaction when compared to employees who drank less. There were no differences between risky users and other employees with regard to sleep problems and somatic complaints, nor were there any gender differences in the examined associations.

Discussion: Our findings indicate that risky alcohol use in the Norwegian workforce is associated with impaired health and well-being, without evidence of a gender differential. The findings support the thresholds for risky alcohol use as proposed by the World Health Organization.

Key points

- This study examined association between alcohol use and health in a working population.
- Risky alcohol use was associated with higher levels of psychological distress and lower job satisfaction.
- Risky alcohol use was not associated with somatic complaints or sleep problems
- There was no evidence of a gender differential in the association between alcohol use and the indicators of health and well-being.

Alcohol use in the Norwegian workforce: Associations with health and well-being

Health and safety problems related to excessive alcohol consumption represent a major concern in many businesses [1]. “Overall, 4% of the global burden of disease is attributable to alcohol, which accounts for about as much death and disability globally as tobacco and hypertension” (p.519) [2]. However, as most research on the health correlates of alcohol use has been conducted in clinical sub-populations or general population samples, there is a shortage of knowledge about how alcohol use relates to health and workability in working populations. In previous workforce studies, no clear association has been discovered between alcohol intake and health outcomes [3]. In order to fill this gap, this study examines how levels of alcohol consumption relates to psychological distress, somatic complaints, sleep, and job satisfaction in the Norwegian workforce. Based on the healthy worker effect [4], we expect that the relation between alcohol use and health is small in a sample of presently employed as those with poor health are likely to drop out of the labor force.

Method**Design and sample**

A random sample of 5000 employees drawn from The Norwegian Central Employee Register by Statistics Norway. Sampling criteria were adults from 18 to 60 years of age employed in a Norwegian enterprise. Questionnaires were distributed through the Norwegian Postal Service during spring 2015. The Regional Committee for Medical Research Ethics for Eastern Norway approved the survey. Responses were treated anonymously. Informed consent was given by the respondents.

Alcohol use was measured by asking how many units of alcohol the respondents consumed in a typical week. A unit of alcohol was defined to be 10-15 grams of ethanol, which corresponds to about 0.5 liters of beer, one glass of wine, or one drink containing spirits. Following the recommendations from the World Health Organization (WHO), a

weekly intake of more than 21 units for men and 14 units for women increases the risk for alcohol related problems. Based on these thresholds, alcohol use was coded into four discrete categories based on weekly consumption: “Abstainers” (0 units for both genders), “Low to moderate use” (men: 1-11 units; women 1-7 units), “moderate to high use” (men: 12-21 units; women: 8-14 units), and “risky use” (men >21 units; women >14 units).

Psychological distress during the last week was measured by 17 items from the Hopkins Symptom Checklist [5]. The four-point response scale ranged from “1=not at all” to “4=extremely”. *Somatic health* complaints were measured by four items asking “have you been bothered by “neck pain”, “headache”, “upper back pain”, and “lower back pain” during the last four weeks” [6]. *Sleep problems* were assessed with three questions developed for this survey asking whether the respondents had “difficulties falling asleep”, “difficulties with continuous sleep during night”, and “Early awakening in the morning”. The four-point scale used for the somatic health and sleep problem items ranged from “1=not bothered” to “4=very intensely bothered.” *Job satisfaction* was measured with four items from the Job Satisfaction scale [7, 8]. The response scale ranged from “1=totally disagree” to “5=totally agree”. Cronbach’s alpha was .88 for psychological distress, .70 for somatic complaints, .81 for sleep problems, and .87 for job satisfaction.

Statistical analyses were conducted using IBM SPSS Statistics 23.0. Group differences were tested using analysis of variance (ANOVA) with Bonferroni post hoc tests. Level of significance was set to <.05.

Results

Altogether 1608 persons returned the questionnaire (response rate: 32%) and provided usable responses. Mean age was 45.19 ($SD=10.04$) years (range: 21 to 61). The sample comprised slightly more women (52%) than men (48%). Altogether 9.4% had less than 11

years of education, 31.0% had between 11 and 13 years, 32.0% had between 14 and 17 years, and 27.8% had 18 years or more years. In total, 89.4% worked full-time, 6.6% worked part-time, and 4% were on a sick leave or occupational rehabilitation. Altogether 36% had a leadership position with personnel responsibilities.

Prevalence estimates by level of weekly alcohol use (see Table 1) show that 19.8% of the sample were abstainers, 71.5% were low to moderate users, 6.3% were moderate to high users, and 2.3% were risky users. Findings on differences in health and well-being between categories of alcohol use are presented in Table 2. Adjusting for age, gender, and tobacco use, risky alcohol users reported significantly higher levels of psychological distress and significantly lower levels of job satisfaction compared to all other categories. Abstainers reported significantly higher levels of somatic complaints compared to moderate to high users. All other comparisons were non-significant. There were no significant interactions between alcohol use and gender.

Discussion

The findings show that both male and female employees with risky alcohol use (more than 21 units for men and 14 units for women per week) report higher psychological distress and lower job satisfaction, compared to employees who drink less. Hence, the results support the threshold for problematic alcohol consumption as proposed by the WHO by showing that persons with a risky use is more prone to having health problems and lowered well-being. The findings are consistent with a previous study on a working population that established health problems as a correlates of excessive alcohol use [9]. Due to the association with health impairment, it is critical that prevention and screening programs be developed to keep workers from becoming risky drinkers and to help those who are risky drinkers. .

Strengths of this study include a large probability sample and the use of validated instruments. As for limitations, the study is cross-sectional and does not allow for inferences about causal relations between alcohol use and health. Although the associations were statistically significant, the magnitude of the relations was weak and the clinical significance may be restricted. Data were based on self-reports, which can make results susceptible to under-reporting, common method bias, and inflated associations [1, 10]. Despite these limitations, our findings indicate that risky alcohol use in the Norwegian workforce is associated with higher levels of psychological distress and lower job satisfaction, without evidence of a gender differential.

References

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Table 1. Prevalence of weekly alcohol use in the Norwegian workforce

<i>Alcohol use</i>	Total sample	Men	Women
1. Abstainers	19.8	19.9	19.9
2. Low to moderate	71.5	74.5	64.4
3. Moderate to high	6.3	4.0	12.0
4. Risky	2.3	1.6	3.7

Table 2. Differences in health and well-being between alcohol consumption categories (all analyses adjusted for age, gender, and tobacco use).

<i>Alcohol use</i>	Psychological distress		Somatic complaints		Sleep problems		Job satisfaction	
	M	95% CI	M	95% CI	M	95% CI	M	95% CI
1. Abstainers	1.39 ⁴	1.34 – 1.44	1.89 ³	1.80 – 1.98	1.69	1.56 – 1.80	4.24 ⁴	4.13 – 4.34
2. Low to moderate	1.38 ⁴	1.36 – 1.42	1.83	1.78 – 1.88	1.68	1.62 – 1.75	4.23 ⁴	4.18 – 4.29
3. Moderate to high	1.33 ⁴	1.25 – 1.42	1.63 ¹	1.48 – 1.78	1.73	1.55 – 1.91	4.33 ⁴	4.16 – 4.50
4. Risky	1.59 ^{1,2,3}	1.45 – 1.73	1.74	1.49 – 1.99	2.07	1.77 – 2.37	3.76 ^{1,2,3}	3.48 – 4.04
<i>Group differences</i>	F=3.23; p<.05		F=3.08; p<.05		F=2.13; p>.05		F=4.25 p<.01	

Note. Numbers in superscript show significant group differences.

M=Mean, 95% CI= 95% Confidence interval for Mean.