Alcohol and drug use among Danish physicians. A nationwide cross-sectional study in 2014

Johanne Korsdal Sørensen[1], Anette Fischer Pedersen[2], Niels Henrik Bruun[1], Bo Christensen[1] & Peter Vedsted[2]

ABSTRACT

INTRODUCTION: The aims of this study were to describe Danish physicians' use of alcohol and drugs, their self-reported assessment of their use of alcohol and drugs, and their management of colleagues with substance use disorder in physician workplaces.

METHODS: During the spring of 2014, a nationwide cross-sectional study was conducted as an anonymous, electronic survey among a randomly weighted sample of 1) consultants and practicing specialists, 2) younger physicians (trainees) and 3) general practitioners in Denmark. A total of 4,000 physicians (approx. 1,333 from each group) were sampled and 1,943 responded (49%). The survey included the Alcohol Use Disorders Identification Test on alcohol use and the Drug Use Disorders Identification Test on drug use and related questions on health and psychological issues.

RESULTS: The three groups had an almost equal share of risky alcohol use (comprising hazardous, harmful and dependent use) of 17.2-20.3%. The highest proportion (24%) of risky alcohol use was found for both internal medicine and emergency medicine and the lowest for general practice (16%). Significantly more male physicians (25.1%) than female physicians (14.4%) reported risky alcohol use. Among physicians with risky substance use, 23.1% recognised their risky use.

CONCLUSION: The proportion of physicians with a risky use of alcohol and drugs was 19% and 3.0%, respectively. Significantly more male than female physicians reported risky alcohol use. Among physicians with a risky substance use, only one in four recognised this as problematic.

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Studies have shown that 8-15% of physicians experience a substance use disorder (SUD) [1] at some point in their careers, and alcohol use disorders are as common among physicians as they are in the general population [2, 3]. Substances are defined as all kinds of intoxicants, such as alcohol and drugs (licit and illicit). A review showed that SUD is seen among all specialties and *that SUD are largely equally prevalent in different specialties* [2].

A study comparing the alcohol use of general practitioners and hospital physicians in Denmark and Germany showed that significantly more Danish physicians (12.7%) than German physicians (2.5%) reported hazardous alcohol use [4].

Physicians tend to postpone treatment until their SUD reaches a critical stage [3], even though long-term disorders that go untreated may have fatal consequences [5]. A study of 108 Danish physicians registered with a drug use disorder by the Danish Health Authority in 1949-1957 revealed that after 20 years, only 40% of the registered physicians were alive as opposed to 80% among other groups of Danes with drug use disorder; and at least 25% of the dead physicians had committed suicide [6]. This dismal prognosis was confirmed in two later Danish studies [5, 7].

Danish physicians' patterns of licit and illicit drug use are unknown. Furthermore, little is known about the management of colleagues with SUD in physician workplaces. If we are to improve prevention and treatment of SUD, we need to know more about the frequency of SUD and whether specific groups are more prone to SUD than others.

The aims of this study were to describe alcohol and drug use among Danish physicians (including illicit as well as licit drugs), the physicians' self-reported assessment of their own alcohol and drug use, and their management of colleagues with SUD in physician workplaces.

METHODS

Study population

Data were collected using a cross-sectional survey among 4,000 physicians randomly selected among all 26,669 active members of the Danish Medical Association (DMA). We sampled 1,333 respondents from each of the following three DMA subgroups: The Danish Association of Junior Doctors (DAJD), The Danish Association of Medical Specialists (DAMS) and The Danish Organisation of General Practitioners (DOGP). Retired physicians were excluded.

Data collection

The 4,000 physicians received an e-mail with a hyperlink to an electronic questionnaire (Survey Xact) distributed by the DMA (April-June 2014). To encourage participation, a personalised hard-copy letter signed by the Chairman of the DMA was distributed to all participants be-

fore the email was sent. Additionally, the study was mentioned in the DMA journal before the emailing of the survey and between the second and third reminders.

TABLE 1

The weighted share of The Danish Association of Medical Specialists, The Danish Organisation of General Practitioners and The Danish Association of Junior Doctors members of the Danish Medical Association and the characteristics of the respondents.

	DAMS	DOGP	DAJD	p-value
Respondents, weighted n[a]	8,080	4,167	11,070	
Total study base, n (%)	617 (34.7)	721 (17.9)	605 (47.5)	
Sex, n (%)				< 0.001
Male	368 (59.6)	366 (50.8)	193 (31.9)	
Female	249 (40.4)	355 (49.2)	412 (68.1)	
Age, yrs, mean (SD)	56.3 (7.3)	53.9 (13.1)	36.8 (5.7)	< 0.001
Age group, n (%)				< 0.001
20-40 yrs	16 (2.6)	63 (8.7)	478 (79.0)	
41-50 yrs	130 (21.1)	221 (30.7)	98 (16.2)	
51-60 yrs	296 (48.0)	244 (33.8)	24 (4.0)	
≥ 61 yrs	175 (28.4)	193 (26.8)	5 (0.8)	
Marital status, n (%)				0.010
Living alone/ other	96 (15.6)	90 (12.5)	116 (19.2)	
Married/ living together	521 (84.4)	631 (87.5)	489 (80.8)	
Children at home, n (%)				< 0.001
Yes	230 (37.6)	321 (45.2)	400 (66.7)	
No	382 (62.4)	389 (54.8)	200 (33.3)	
Managerial position, n (%)				< 0.001
Yes	424 (69.4)	675 (94.7)	72 (12.0)	
No	187 (30.6)	38 (5.3)	530 (88.0)	
Specialty, n (%)				< 0.001
Emergency	77 (12.6)	0 (0.0)	51 (8.6)	
General practice	11 (1.8)	697 (97.6)	99 (16.6)	
Occupational medicine	23 (3.8)	2 (0.3)	6 (1.0)	
Psychiatry	56 (9.2)	0 (0.0)	41 (6.9)	
Internal medicine	167 (27.4)	2 (0.3)	190 (31.9)	
Surgery	97 (15.9)	1 (0.1)	84 (14.1)	
Other	179 (29.3)	12 (1.7)	125 (21.0)	
Been in treatment, n (%)				0.860
Yes	3 (0.5)	3 (0.4)	2 (0.3)	
No	611 (99.5)	713 (99.6)	600 (99.7)	
Region, n (%)				< 0.001
Capital Region of Denmark	254 (41.4)	195 (27.2)	243 (40.5)	
Central Denmark Region	111 (18.1)	188 (26.3)	147 (24.5)	
North Denmark Region	48 (7.8)	66 (9.2)	42 (7.0)	
Region Zealand	73 (11.9)	104 (14.5)	67 (11.2)	
Region of South Denmark	127 (20.7)	163 (22.8)	101 (16.8)	
AUDIT score, mean (SD)	5.6 (3.7)	5.2 (5.3)	5.1 (3.1)	0.051
AUDIT (scores 8-40) risky use, n (%)				0.476
No	468 (79.7)	560 (82.8)	467 (80.8)	
Yes	119 (20.3)	116 (17.2)	111 (19.2)	
DUDIT (scores 1-44) risky use, n (%)				0.163
No	602 (97.6)	702 (97.4)	581 (96.0)	
Yes	15 (2.4)	19 (2.6)	24 (4.0)	

AUDIT = Alcohol Use Disorders Identification Test; DAJD = Danish Association of Junior Doctors; DAMS = Danish Association of Medical Specialists; DOGP = Danish Organisation of General Practitioners; DUDIT = Drug Use Disorders Identification Test; SD = standard deviation.
a) Sum of population weights in the group.

Reminders were sent out three times within eight weeks. Participation was not remunerated. The questionnaire took approx. 30 minutes to complete. Twenty-two physicians asked to be excluded from the survey because of recent retirement, work abroad and maternity leaves.

The questionnaire

Based on a pre-study consisting of qualitative interviews study with physicians who had previously been addicted/had a SUD, we identified themes for the questionnaire. Thereafter the questionnaire was developed and validated, and standardised self-rating scales were selected. All ad-hoc items were developed in the research group and pilot-tested before use. The questionnaire was pilot-tested by 30 randomly selected physicians representing the three DMA groups. Items were tested cognitively and for floor/ceiling effects and missing items. The ad-hoc items were inspired by a Danish national survey of the population's use of intoxicants [8] and Danish and Norwegian surveys of physicians' health and work conditions [9].

We used standardised measures of problematic alcohol use based on the internationally used Alcohol Use Disorders Identification Test (AUDIT). A modified version of the Drug Use Disorders Identification Test (DUDIT) [10] was used for the investigation of drug use. The DUDIT questions were slightly modified as our focus was on drug (licit and illicit) use for the purpose of intoxication. Both scales are based on the International Classification of Diseases, 10th version (ICD-10) definitions and developed for the World Health Organisation [10, 11].

The ten questions in AUDIT and the 11 questions in DUDIT are scored on a five-point Likert scale from 0 ("never") to 4 ("daily or almost daily"). The maximum score on AUDIT is 40 points. Following recommendations [12], the AUDIT score was divided into four groups defined as follows: no hazardous use (< 8), hazardous alcohol use (risky use potentially harmful and causing dependence) (8-15), harmful alcohol use (causing physical or mental harm) (16-19) and alcohol dependence (≥ 20). In the present article, we use the term "risky use" to comprise, hazardous, harmful and dependent substance use.

DUDIT includes both questions about illicit drugs and commonly abused prescription medication; and it identifies dependence, hazardous use and harmful use of drugs with a maximum score of 44 points [10]. DUDIT is a relatively new tool; and there are ongoing discussions concerning the cut-off points for scores. In line with other studies [13], the present study chose 1 as the cut-off for risky use (potentially harmful and causing dependence) for both sexes as Denmark has a zero tolerance of drug use for intoxication purposes.

Statistical analyses

The analyses were performed using STATA software (version 13.1) and the included survey package. Differences between subgroups of physicians concerning substance use were tested using Pearson's chi-squared test when number and percentage (%) were reported. The 27 medical specialties were categorised into seven groups (see Appendix). When mean and standard deviation were reported, one-way analysis-of-variance (ANOVA) was used. All reported estimates including proportions were weighted when appropriate according to the original proportion of physicians in the three DMA groups.

TABLE 2

Respondent characteristics by Alcohol Use Disorders Identification Test and Drug Use Disorders Identification Test scores[a]. Respondents are from The Danish Association of Medical Specialists, The Danish Organisation of General Practitioners and The Danish Association of Junior Doctors.

	AUDIT				DUDIT		
	1-7	8-15	16-	p-value	0	1-	p-value
Accumulated weight	17,910	3,704	556		22,572	745	
Respondents n (%)	1,495 (80.8)	300 (16.7)	46 (2.5)		1,885 (96.8)	58 (3.2)	
Sex, n (%)				< 0.001			0.065
Male	661 (74.9)	185 (21.7)	29 (3.4)		893 (95.9)	34 (4.1)	
Female	834 (85.6)	115 (12.6)	17 (1.8)		992 (97.5)	24 (2.5)	
Age, yrs, mean (SD)	46.5 (11.9)	46.5 (12.5)	46.7 (12.6)	0.995	46.6 (12.1)	45.0 (11.8)	0.358
Age group, n (%)				0.021			0.550
20-40 yrs	432 (79.9)	91 (17.7)	12 (2.4)		537 (96.1)	20 (3.9)	
41-50 yrs	373 (86.2)	46 (10.7)	13 (3.1)		437 (97.3)	12 (2.7)	
51-60 yrs	412 (78.0)	103 (20.3)	10 (1.7)		547 (96.9)	17 (3.1)	
≥ 61 yrs	278 (80.1)	60 (16.6)	11 (3.3)		364 (97.7)	9 (2.3)	
Sub-association, n (%)				0.754			0.163
DAMS	468 (79.7)	105 (17.9)	14 (2.4)		602 (97.6)	15 (2.4)	
DOGP	560 (82.8)	99 (14.6)	17 (2.5)		702 (97.4)	19 (2.6)	
DAJD	467 (80.8)	96 (16.6)	15 (2.6)		581 (96.0)	24 (4.0)	
Marital status, n (%)				< 0.001			0.184
Living alone/other	209 (70.9)	56 (22.2)	18 (6.9)		289 (95.5)	13 (4.5)	
Married/living together	1,286 (82.7)	244 (15.6)	28 (1.6)		1,596 (97.1)	45 (2.9)	
Children at home, n (%)				< 0.001			0.223
Yes	772 (84.7)	124 (14.0)	14 (1.3)		925 (97.3)	26 (2.7)	
No	709 (76.2)	176 (20.1)	30 (3.8)		939 (96.2)	32 (3.8)	
Leading position, n (%)				0.696			0.825
Yes	910 (81.3)	178 (16.5)	26 (2.2)		1,135 (96.7)	36 (3.3)	
No	576 (80.2)	121 (17.0)	19 (2.8)		733 (96.9)	22 (3.1)	
Specialty, n (%)				0.060			0.528
Emergency	96 (76.2)	23 (18.2)	7 (5.6)		126 (98.7)	2 (1.3)	
General practice	636 (84.3)	110 (14.2)	15 (1.5)		785 (97.3)	22 (2.7)	
Occupational medicine	24 (78.3)	6 (18.6)	1 (3.1)		30 (96.9)	1 (3.1)	
Psychiatry	77 (83.1)	13 (14.3)	2 (2.6)		92 (94.5)	5 (5.5)	
Internal medicine	258 (76.2)	71 (21.4)	8 (2.5)		348 (96.8)	11 (3.2)	
Surgery	135 (78.1)	34 (20.0)	3 (1.9)		174 (95.2)	8 (4.8)	
Other	255 (84.5)	41 (12.7)	9 (2.8)		307 (96.8)	9 (3.2)	
Been in treatment, n (%)				< 0.001			0.636
Yes	3 (42.5)	2 (21.6)	2 (35.9)		8 (100.0)	0 (0.0)	
No	1.487 (80.9)	298 (16.7)	44 (2.4)		1.866 (96.8)	58 (3.2)	
Region, n (%)				0.507			0.027
Capital Region of Denmark	516 (79.6)	121 (17.9)	17 (2.5)		664 (95.9)	28 (4.1)	
Central Denmark Region	342 (79.4)	64 (16.7)	16 (3.9)		435 (97.6)	11 (2.4)	
North Denmark Region	124 (80.5)	24 (17.8)	5 (1.7)		155 (99.3)	1 (0.7)	
Region Zealand	195 (81.9)	33 (15.5)	4 (2.6)		234 (94.2)	10 (5.8)	
Region of Southern Denmark	307 (83.9)	57 (14.9)	4 (1.2)		383 (98.2)	8 (1.8)	

AUDIT = Alcohol Use Disorders Identification Test; DAJD = Danish Association of Junior Doctors; DAMS = Danish Association of Medical Specialists; DOGP = Danish Organisation of General Practitioners; DUDIT = Drug Use Disorders Identification Test; SD = standard deviation.
a) AUDIT missings = missings; DUDIT missings = no use/no risky use.

Ethics

The data collection was approved by the Danish Data Protection Agency (case no. 2013-41-1996). The physicians' identities are only known by the DMA, who has no access to the data. A funding agreement ensured the authors' independence in designing the study, interpreting the data, writing and publishing the report.

Trial registration: not relevant.

RESULTS

A total of 1,943 (48.6%) physicians completed the questionnaire. The respondents' socio-demographic characteristics are shown in **Table 1**. The overall proportions of physicians reporting risky alcohol and drug use (hazardous, harmful and dependent use) were 18.9% and 3%, respectively (Table 1).

A total of 108 (6.4%) physicians had used drugs (licit or illicit) at some point in time during their medical career. A total of 58 physicians (3%) had used drugs with the purpose of intoxication (34 (4.1%) males and 24 (2.5%) females).

During the year preceding the survey, 95 (4.7%) physicians had used sleeping medicine, and 61 (3.2%) physicians had used prescribed painkillers (other than over-the-counter medicine) without medical indication. During the past year, 184 (7.9%) physicians reported using tranquillisers less than once a week, and 71 (3.4%) had used sleeping medicine without medical indication.

Table 2 shows physician characteristics in relation to substance use. Among male physicians, 25.1% reported risky alcohol use as opposed to 14.4% of the female physicians (< 0.001).

Within the three sub-associations, approx. 2.5% reported harmful or dependent use of alcohol. Among the emergency medicine specialty, a score indicating harmful or dependent use of alcohol was seen for 5.6% (Table 2). The specialties with the highest prevalence of risky alcohol use were internal medicine and emergency medicine both with (24%), and the lowest score was recorded for general practice (16%). In total, 8 (0.4%) respondents had been in treatment for SUD.

The main reported reasons for alcohol or drug use among physicians with a risky substance use were to enjoy the taste (74.4%) and to relax efficiently after work (54.6%) (**Table 3**). Among the 383 respondents with risky substance use, 76.9% characterised their substance use as unproblematic.

In case a colleague showed signs of SUD, 57.7% of the physicians reporting risky substance use and 55.5% of those reporting unproblematic use stated that they would offer their help and encourage their colleague to seek treatment (**Table 4**). A total of 60 physicians (2.5%) reported that SUD was discussed openly at their workplace.

TABLE 3

Physicians with risky substance use. Physician-reported reasons for substance use (multiple answer options). A few items were excluded due to very few or no answers.

	DAMS, n (%)	DOGP, n (%)	DAJD, n (%)	Pooled estimate, % (95% CI)
Accumulated weight[a]	1,663	746	2,324	
Physicians with risky substance use				
Get in a good mood	48 (37.8)	59 (45.7)	90 (70.9)	55.3 (50.1-60.3)
Relax efficiently after work	71 (55.9)	87 (67.4)	63 (49.6)	54.6 (49.2-60.0)
Ease pain	6 (4.7)	5 (3.9)	4 (3.1)	3.8 (2.2-6.5)
Seem relaxed at work despite a high stress level	2 (1.6)	2 (1.6)	4 (3.1)	2.3 (1.1-4.8)
Forget problems	9 (7.1)	12 (9.3)	10 (7.9)	7.8 (5.4-11.3)
Suppress insecurity	3 (2.4)	3 (2.3)	11 (8.7)	5.4 (3.3-8.8)
To enable sleep at night	14 (11.0)	10 (7.8)	9 (7.1)	8.6 (6.0-12.1)
To enjoy the taste	91 (71.7)	96 (74.4)	97 (76.4)	74.4 (69.4-78.9)
No use	1 (0.8)	2 (1.6)	3 (2.4)	1.7 (0.7-4.0)
Total	127	129	127	
Physicians' description of their substance use and the degree of related problems				
Unproblematic use of alcohol and drugs	90 (70.9)	84 (65.1)	108 (85.0)	76.9 (72.3-81.0)
An overuse of alcohol and drugs	14 (11.0)	13 (10.1)	5 (3.9)	7.4 (5.1-10.6)
An over use of alcohol and drugs – but I am in control of it	21 (16.5)	26 (20.2)	10 (7.9)	12.9 (9.8-16.7)
An over use of alcohol and drugs – I intend to reduce it soon	9 (7.1)	13 (10.1)	11 (8.7)	8.3 (5.8-11.9)

CI = confidence interval; DAJD = Danish Association of Junior Doctors; DAMS = Danish Association of Medical Specialists; DOGP = Danish Organisation of General Practitioners.
a) Sum of population weights in the group.

TABLE 4

How physicians with and without risky substance use reported that they would deal with a colleague with substance use disorder.

	DAMS, n (%)	DOGP, n (%)	DAJD, DAJD,	Pooled estimate, % (95% CI)
Physicians with risky substance use				
Accumulated weight[a]	1,663	746	2,324	
Respondents:				
It is a private issue and it should stay private	7 (5.5)	6 (4.7)	8 (6.3)	5.8 (3.7-9.0)
I inform my managers about the problem	37 (29.1)	2 (1.6)	32 (25.2)	22.9 (18.5-27.9)
I speak to the person and offer my help	57 (44.9)	73 (56.6)	58 (45.7)	47.1 (41.7-52.6)
I speak to the person and encourage him/her to seek treatment	70 (55.1)	67 (51.9)	78 (61.4)	57.7 (52.3-63.0)
I speak to his/her relatives and encourage them to deal with the problem	7 (5.5)	12 (9.3)	6 (4.7)	5.7 (3.7-8.7)
I establish contact to the Network of Physician Colleagues	17 (13.4)	33 (25.6)	18 (14.2)	15.7 (12.2-19.9)
I speak to the trade union representative	7 (5.5)	4 (3.1)	36 (28.3)	16.3 (12.6-20.9)
Other	17 (13.4)	10 (7.8)	4 (3.1)	7.5 (5.2-10.6)
Total	127 (35.1)	129 (15.8)	127 (49.1)	
Physicians with unproblematic substance consumption				
Accumulated weight[a]	6,417	3,421	8,746	
Respondents:				
It is a private issue, and it should stay private	12 (2.4)	18 (3.0)	20 (4.2)	3.4 (2.5-4.5)
I inform my managers about the problem	181 (36.9)	62 (10.5)	131 (27.4)	27.6 (25.2-30.1)
I speak to the person and offer my help	177 (36.1)	279 (47.1)	202 (42.3)	41.0 (38.4-43.7)
I speak to the person and encourage him/her to seek treatment	272 (55.5)	328 (55.4)	265 (55.4)	55.5 (52.7-58.1)
I speak to his/her relatives and encourage them to deal with the problem	12 (2.4)	31 (5.2)	22 (4.6)	4.0 (3.0-5.2)
I establish contact to the Network of Physician Colleagues	95 (19.4)	135 (22.8)	72 (15.1)	18.0 (16.0-20.1)
I speak to the trade union representative	44 (9.0)	19 (3.2)	155 (32.4)	19.0 (16.9-21.2)
Other	33 (6.7)	50 (8.4)	30 (6.3)	6.8 (5.6-8.3)
Total	490 (34.5)	592 (18.4)	478 (47.1)	

DAJD = Danish Association of Junior Doctors; DAMS = Danish Association of Medical Specialists; DOGP = Danish Organisation of General Practitioners.
a) Sum of population weights in the group.

DISCUSSION

We found that nearly one-fifth of physicians had engaged in risky alcohol use, with similar results within the three sub-associations of the DMA. The highest proportions of physicians with a risky alcohol use were found in internal and emergency medicine and in surgery. Male physicians were statistically significantly more likely to have a problematic use of alcohol than female physicians. Overall, 3% reported a hazardous use of drugs. About three quarters of those reporting a risky substance use considered that their use was unproblematic. If a colleague showed signs of SUD, the preferred action was personal contact.

Strengths and limitations

This is the first national survey of its kind in Denmark. We used two standardised screening tools, AUDIT and DUDIT. For AUDIT, a cut-off point at 8 has previously been tested, and this cut-off point yields a sensitivity of 98% and a specificity of 94% for hazardous alcohol use [11]. Denmark has a zero tolerance policy for use of drugs for intoxication purposes. For DUDIT, we therefore decided to use 1 as the cut-off point for both sexes, which indicates that any use of drugs for intoxication purposes is risky; a choice, which is in line with e.g. [13].

The response rate of 48.6% could lead to potential selection bias. A recent Austrian e-mail-based survey had a response rate of 18% [14], and a Danish/German postal survey had a response rate of 74%. Considering this and the delicate nature of the topic, we consider the response rate to be satisfactory. The selection bias due to non-response may imply that respondents had fewer substance use problems than non-responders because physicians with substance use problems would be more reluctant to reveal these to themselves and to their colleagues. An international review has suggested underreporting to vary between 40% and 60% in studies of alcohol use [15]. This indicates that our study may underestimate the prevalence of risky substance use among physicians.

We adjusted our analyses for the weighted sample to ensure that the prevalence rates reported within each group and overall were comparable and reported the ac-

Physicians conceal their substance use disorders – it is a huge taboo

tual figures. We used disproportional sampling to ensure a high statistical precision for every stratum, which was recorded.

Comparison with other studies

We found that around 19% of the physicians reported risky alcohol use. This percentage is higher than percentages reported in international studies where rates span from 10% to 15%. However, these differences may be due to differences in measurement tools. In comparison with similar screening methods Cut Down, Annoyed, Guilty, Eye-Opener (CAGE) and Michigan Alcohol Screening Test (MAST), AUDIT appeared to be the best screening tool to identify hazardous use and/or dependence as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM) [1, 16]. A survey from 2013 showed that 20.6% and 8.5% of the Danish population exceeded the limits (recommended by the Danish Health and Medicines Authority) of 7-14 units of alcohol per week for females and 14-21 for males, respectively [17]. Risky alcohol use was significantly more prevalent in male than in female physicians, which corresponds to international findings [2].

Physicians with risky substance use had a low degree of problem recognition as nearly three quarters believed that their use was unproblematic. As international research has shown that physicians tend to treat their patients in correspondence with their own health conduct, this may be an important finding [4]. Additionally, only seven respondents had received treatment. Similarly, results from other countries show that physicians rarely seek treatment on their own initiative [18]. The direct implication for patient safety is not well-known, but a recent US survey found that a high proportion (78%) of the surgeons reporting a medical error in the previous three-month period had alcohol abuse or dependency [19].

Research focusing on the reasons for substance use among physicians is scarce, one exception being Merlo et al [20]. In line with this study, we found that the majority of physicians with risky substance use reported that they used substances to enjoy the taste and to relax efficiently after work.

To our knowledge, there are no quantitative studies of the workplace management of colleagues with SUD before they enter treatment. Our study shows that when a colleague shows signs of SUD, half of the physicians reported that they would encourage this colleague to seek treatment, and around one third of the DAMS and DAJD physicians would inform their managers. DOGP members, who own their own practices, were almost twice as likely as physicians from DAMS and DAJD to report that they would use the Network of Physician Colleagues. The conditions and attitudes towards workplace management of SUD thus seem to vary.

CONCLUSION

The prevalence of problematic alcohol and drug use was 19% and 3%, respectively. Males had SUD significantly more often than did females. Three quarters of physicians reporting risky substance use did not recognise their risky use of substances. Very few found that there was an explicit procedure and openness about SUD in workplaces, and most would have a personal talk with a colleague showing signs of SUD. Our study indicates a need for more openness about SUD among physicians. Our study also indicates a need for prevention, monitoring and explicit procedures for managing and treating SUD, which seems to be a prevalent issue among physicians. Besides the human implications for physicians, such risky alcohol and drug use is important for patient safety. More research is needed to get a thorough understanding of the associations between this issue and both psychosocial and work cultural factors affecting it to direct prevention and intervention measures expediently.

CORRESPONDENCE: *Johanne Korsdal Sørensen*, Section of General Practice, Department of Public Health, University of Aarhus, 8000 Aarhus C, Denmark. E-mail: jks@ph.au.dk

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LITERATURE

1. American Psychiatric Association. DSM-5 Task Force. Diagnostic and statistical manual of mental disorders: DSM-5. 5. ed. Washington, D.C.: American Psychiatric Publishing, 2013.
2. Cicala RS. Substance abuse among physicians: What you need to know. Hosp Phys 2003:39-46.
3. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. Lancet 2009;374:1714-21.
4. Rosta J. Drinking patterns of doctors: a comparison between Aarhus in Denmark and Mainz in Germany. Drugs Educ Prev Policy 2002;9:367.
5. Sørensen AS, Sørensen T, Andersen J et al. Addiction to drugs and alcohol among doctors and nurses. Ugeskrift Læger 1989;151:2260-4.
6. Nimb M. Misbrug af euforiserende stoffer i Danmark i 1950'erne med

efterundersøgelse i 1972: I. København, II. Læger, III. Provinsen. Aarhus: eget forlag, 1975.
7. Hansen ET, Fouchard JR, Hoffmeyer JH et al. Physicians and nurses subjected to disciplinary actions because of substance abuse. Ten years of experience with supervision in Copenhagen. Ugeskrift Læger 2002; 164:5505.
8. Bloomfield K, Elmeland K, Villumsen S. Rusmidler i Danmark: forbrug, holdninger og livsstil. Aarhus: Center for Rusmiddelforskning, Aarhus Universitet, 2013.
9. Rosta J, Aasland OG. Changes in alcohol drinking patterns and their consequences among Norwegian doctors from 2000 to 2010: a longitudinal study based on national samples. Alcohol Alcohol 2013;48:99-106.
10. Berman AH, Bergman H, Palmstierna T et al. Evaluation of the Drug Use Disorders Identification Test (DUDIT) in criminal justice and detoxification settings and in a Swedish population sample. Eur Addict Res 2005;11:22-31.
11. Saunders JB, Aasland OG, Babor TF et al. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption – II. Addiction 1993;88:791-804.
12. Babor TF. Division of mental health. AUDIT: the Alcohol Use Disorders Identification Test: guidelines for use in primary health care. Geneva: World Health Organization, Division of Mental Health, 1989.
13. Sinadinovic K, Wennberg P, Berman AH. Internet-based screening and brief intervention for illicit drug users: a randomized controlled trial with 12-month follow-up. J Stud Alcohol Drugs 2014;75:313-8.
14. Wurst FM, Rumpf H, Skipper GE et al. Estimating the prevalence of drinking problems among physicians. Gen Hosp Psychiatry 2013;35:561-4.
15. Midanik L. The validity of self-reported alcohol use and alcohol problems: a literature review. Br J Addict 1982;77:357-82.
16. Gache P, Michaud P, Landry U et al. The Alcohol Use Disorders Identification Test (AUDIT) as a screening tool for excessive drinking in primary care: reliability and validity of a French version. Alcohol Clin Exp Res 2005;29:2001-7.
17. Illemann Christensen A. Danskernes sundhed – den nationale sundhedsprofil 2013. Version 1.0 ed. Copenhagen: Danish Health and Medicines Authority, 2014.
18. Ro KE, Gude T, Aasland OG. Does a self-referral counselling program reach doctors in need of help? A comparison with the general Norwegian doctor workforce. BMC Public Health 2007;7:36.
19. Oreskovich MR, Kaups KL, Balch CM et al. Prevalence of alcohol use disorders among American surgeons. Arch Surg 2012;147:168-74.
20. Merlo LJ, Trejo-Lopez J, Conwell T et al. Patterns of substance use initiation among healthcare professionals in recovery. Am J Addict 2013;22:605-12.

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APPENDIX

Categorisation of medical specialties

The specialties were categorised as follows

Emergency comprises both emergency and anaesthesiology; *General practice, Occupational medicine* includes societal medicine; *Psychiatry* includes child and youth psychiatry; *Surgery* includes neurosurgery and orthopaedic surgery; *Internal medicin*e includes neurology, paediatrics and oncology; *Other* includes dermatology, venereology, diagnostic radiology, clinical biochemistry, clinical pharmacology, clinical physiology and nuclear medicine, clinical genetics, clinical immunology, clinical microbiology, ophthalmology, otorhinolaryngology, pathological anatomy and histology, gynaecology and obstetrics and others.