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Counselling for burnout in Norwegian doctors: one year cohort study

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ABSTRACT

Objective To investigate levels and predictors of change in dimensions of burnout after an intervention for stressed doctors.

Design Cohort study followed by self reported assessment at one year.

Setting Norwegian resource centre.

Participants 227 doctors participating in counselling intervention, 2003-5.

Interventions Counselling (lasting one day (individual) or one week (group based)) aimed at motivating reflection on and acknowledgement of the doctors' situation and personal needs.

Main outcome measures Levels of burnout (Maslach burnout inventory) and predictors of reduction in emotional exhaustion investigated by linear regression.

Results 185 doctors (81%, 88 men, 97 women) completed one year follow-up. The mean level of emotional exhaustion (scale 1-5) was significantly reduced from 3.00 (SD 0.94) to 2.53 (SD 0.76) (t=6.76, P<0.001), similar to the level found in a representative sample of 390 Norwegian doctors. Participants had reduced their working hours by 1.6 hours/week (SD 11.4). There was a considerable reduction in the proportion of doctors on full time sick leave, from 35% (63/182) at baseline to 6% (10/182) at follow-up and a parallel increase in the proportion who had undergone psychotherapy, from 20% (36/182) to 53% (97/182). In the whole cohort, reduction in emotional exhaustion was independently associated with reduced number of work hours/week (β=0.17, P=0.03), adjusted for sex, age, and personality dimensions. Among men "satisfaction with the intervention" (β=0.25, P=0.04) independently predicted reduction in emotional exhaustion.

Conclusions A short term counselling intervention could contribute to reduction in emotional exhaustion in doctors. This was associated with reduced working hours for the whole cohort and, in men, was predicted by satisfaction with the intervention.

INTRODUCTION

The importance of early intervention to lower the risk of burnout and mental distress in doctors is underlined by the high prevalence of depression and suicide compared with other groups and by their reluctance to seek help.[1-4] Doctors who work with reduced levels of functioning can be harmful to themselves, their coworkers, and patients.

A resource centre in Norway offers a counselling programme designed to prevent burnout, enhance mental health and quality of life, and strengthen professional awareness and identity. In a previous study we found that doctors entering the programmes had significantly higher levels of emotional exhaustion, mental distress, and job stress than Norwegian doctors in general.[5] We studied the same cohort and carried out assessments before, immediately after, and about one year after the intervention to examine various factors associated with burnout.

METHODS

Study design

We included doctors consecutively attending the resource centre for a counselling intervention from August 2003 to July 2005. They completed self reported assessments in the four weeks before (baseline) and the three weeks after (intervention satisfaction) baseline intervention. Fifty three weeks (SD 6.4, range 40-70 weeks) after the intervention, they completed follow-up questionnaires. The data were compared with data from a survey of Norwegian doctors.

Sample

The mean age of included doctors was 46.9 years (45.0 among practising Norwegian doctors in 2004-5), and 48% of the sample were men (64%). Initially, 187 doctors came to the single day session and 40 came to the one week course. Of the follow-up sample of 185 doctors, within the year after baseline 19 had an additional one day session and 51 had an additional course. Seventy (38%) doctors attending the initial intervention and 12 (6%) attending a follow-up intervention brought their spouse. The interventions were similar for doctors with or without partners. We examined attendance at only one session or at two sessions during the year as a predictor for reduced emotional exhaustion.

Setting

The resource centre is open to all Norwegian doctors and was initiated in cooperation between the Norwegian Medical Association and Modum Bad psychiatric

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hospital. Although it is a self referral centre, some doctors reported being prompted (and some were even referred) to come by their general practitioner or another colleague.

Intervention

Single day counselling session—Individual doctors underwent one session, lasting six to seven hours, with a psychiatrist or a specialist in occupational health. The counselling had a common structure, irrespective of counsellor. The intervention was completely confidential and did not use medical records. Doctors were invited to describe their situation, including contextual factors, both related to the job and otherwise. The counsellor investigated sources of identity, self esteem, and self reliance and identified, acknowledged, and challenged present coping strategies. The doctors' present needs in the short and longer term were focused on, and they were often advised to acknowledge these needs (for example, for treatment).

Week long course—This consisted of sessions for eight participants led by one of the same counsellors in collaboration with an occupational therapist. A daily lecture (90 minutes) introduced themes of possibilities and restraints in working life, the individuals' resources and personality with concepts of identity, communication at work and in private, team work, and prevention of burnout. This was followed by group discussions (90 minutes) based on the participants' own experiences, providing the opportunity to share these issues with colleagues. Doctors could do daily physical activity (75 to 360 minutes) and one session of individual counselling (60 minutes) during the week. The programme is fully described elsewhere.[5]

Comparison sample

We compared our participating doctors with a sample of Norwegian doctors, all of whom had graduated in Norway in 1993-4. The data we used were collected at the 10 year follow-up in 2003 (n=390). Age and sex differences were controlled for.

Our main outcome variables were changes in dimensions of burnout, mental distress, and job stress.

Data at baseline and immediately after intervention

We collected demographic data and data on personality (Eysenck's personality questionnaire with six items from the neuroticism scale and six from the introvert-extrovert scale),[6] contact with resource centre (prompted by own general practitioner or another doctor or referred and attending on own initiative), and satisfaction with intervention (satisfaction questionnaire).[7]

Outcome variables at baseline and follow-up

We collected data on burnout (Maslach's burnout inventory with three subscales: emotional exhaustion, depersonalisation/cynicism, and reduced personal accomplishment),[8] measure of mental distress (Hopkins five symptom checklist (SCL5)),[9] perceived job stress,[5 10 11] sick leave, treatment (such as antidepressants or psychotherapy), and working hours. See bmj.com for full details.

Statistics

We calculated means, frequencies, and correlations. We analysed continuous variables and dichotomous variables appropriately. We compared means between the present sample and the representative sample of Norwegian doctors. We tested prediction of reduction in emotional exhaustion with linear regression. In a multivariate model with sex and age we included significant bivariate associations with preceding and concurrent predictors. We examined interactions between sex and significant predictors and also performed separate analyses by sex. Results are reported as standardised β values. When one or a few items were missing in an instrument we used the mean score of completed items. See bmj.com.

RESULTS

The cohort comprised 227 doctors (94% of 242 eligible). Of these, 88 men and 97 women (185, 81%) completed follow-up. The expectations of the intervention were generally high (table 1).

We found no significant differences in age, sex, or stress levels at baseline between those who completed and those who did not complete follow-up assessments. A higher proportion of those who did not complete follow-up were taking antidepressants at baseline.

Levels of burnout (emotional exhaustion), mental distress (SCL5), and job stress were significantly lower at one year follow-up than at baseline (table 2). There were no significant differences in these changes according to sex, route of attendance, or attending one or two interventions during the year. There was a significant reduction in the proportion of the cohort

Table 1 | Individual variables, route of attendance, personality dimensions, and satisfaction with intervention for 185 doctors after participation in counselling intervention for burnout. Figures are means (SD) or numbers of participants (%, 95% confidence interval)

	Men (n=88)	Women (n=97)
Age (years)	49.4 (9.0)	44.7 (8.2)
Married/cohabiting	76/88 (86.4, 79.2 to 93.6)	74/97 (76.3, 66.8 to 86.0)
Have children aged <16 years	38/88 (43.2, 32.9 to 53.5)	47/97 (48.5, 38.6 to 58.4)
Prompted by doctor to come to counselling	27/88 (30.7, 21.1 to 40.3)	42/97 (43.3, 33.4 to 53.2)
Personality dimension:		
Neuroticism (1-6)	2.85 (1.87)	2.51 (1.76)
Extroversion (1-6)	3.41 (2.16)	3.98 (1.87)
How high were expectations to counselling session? (1-5)	3.77 (0.66)*	3.72 (0.70)†
Were expectations to counselling session fulfilled? (1-5)	4.50 (0.61)*	4.44 (0.63)†
Counselling contributed to clarify important factors (1-4)	3.63 (0.64)*	3.53 (0.57)†
Felt more able to handle problems after counselling (1-3)	2.39 (0.49)*	2.37 (0.56)†

*n=69/70.
†n=79/81.

above levels indicating burnout in relation to emotional exhaustion and need for treatment in relation to SCL5 at follow-up.

The proportion of doctors who had undergone psychotherapy increased substantially, from 20% at baseline to 53% in the year after the intervention. See bmj.com. The number of weeks on sick leave in the preceding year and proportion of physicians receiving disability or rehabilitation benefits increased after the intervention, whereas the proportion of physicians on current full time sick leave was substantially lower at follow-up (6% *v* 35%). A higher proportion of women were on full time sick leave at baseline: 35/86 (41%, 95% confidence interval 31% to 51%) *v* 18/80 men (22%, 10% to 26%), P=0.01. There were no significant sex differences at follow-up.

The numbers of hours worked a week in the cohort at baseline was not significantly different from that of the representative survey of doctors in 2003[12] (43.4 (SD 7.90) *v* 43.6 (SD 8.14), P=0.12). Participating doctors reduced their working hours by a mean of 1.6 hours a week at follow-up. Compared with women, men worked a higher average number of hours a week at baseline: 45.1 hours (SD 7.58) *v* 42.0 hours (SD 7.94) (P=0.01). This difference disappeared at follow-up.

Compared with Norwegian doctors surveyed in 2003, the follow-up sample had lower or non-significantly different levels of emotional exhaustion and total job stress but still had significantly higher values on the Hopkins symptom checklist, adjusted for age and sex. See bmj.com.

We found significant bivariate associations for the whole sample between reduction in emotional exhaustion and a linear function of age (β=−0.16, P=0.04; younger doctors have a greater reduction), neuroticism (β=0.29, P<0.001), extroversion (β=−0.23, P=0.003; more introversion gives more reduction), and reduction of work hours (β=0.21, P=0.01). The significant effects maintained in the multivariate model were from neuroticism, with 8.7% explained variance (β=0.23, P=0.005), extroversion, with an additional 3.7% explained variance (β=−0.20, P=0.01), and reduction of work hours, with an additional 2.7% explained variance (β=0.17, P=0.03), n=158.

There were no interactions between sex and significant predictors. Among men, reduction in emotional exhaustion was associated with neuroticism (β=0.39, P<0.001), extroversion (β=−0.32, P=0.004), satisfaction with the intervention (β=0.27, P=0.04), and reduction of work hours (β=0.25, P=0.03). The significant effects maintained in the multivariate model were from neuroticism, with 17.5% explained variance (β=0.32, P=0.02), and satisfaction with the intervention, with an additional 6.5% explained variance (β=0.25, P=0.04), n=58.

DISCUSSION

Principal findings

One year after a counselling intervention initially stressed doctors reported a reduction in emotional exhaustion (burnout) and job stress to the levels found in a representative sample of Norwegian doctors. After adjustment for sex, age, and the personality dimensions of neuroticism and introversion, reduced emotional exhaustion was associated with "reduction of work hours" after the intervention in the whole cohort. Among men reduction in emotional exhaustion was also predicted by satisfaction with the intervention.

The considerable reduction in full time sick leave at follow-up compared with baseline, together with a relatively modest reduction in weekly work hours (less than two hours), supports the notion that the intervention had a positive impact on the working capacity of the doctors. Further investigation could determine whether this was caused by, or mediated through, the increase in number of weeks on sick leave after the intervention or the fact that more doctors sought psychotherapy.

Strengths and weaknesses

The longitudinal design with one year follow-up and the comparison with a representative sample of Norwegian doctors are strengths in this study. The high proportion of participants who completed follow-up (81%) strengthens the internal reliability of the results. The validity of the self reported findings is

Table 2 | Burnout, mental distress, and job stress at baseline and at one year follow-up in cohort of doctors participating in counselling for burnout. Figures are means (SD) or numbers of participants (%; 95% confidence interval)

	Baseline	One year follow-up	Difference	Paired *t* test	P value
Maslach burnout inventory:					
Emotional exhaustion (1-5) (n=168)	3.00 (0.94)	2.53 (0.76)	0.47 (0.91)	6.76	<0.001
Emotional exhaustion: score indicates caseness (>3)	76 (45.2; 37.7 to 52.7)	41 (24.4; 17.9 to 30.0)	35 (20.8; 14.7 to 26.9)	—	<0.001*
Depersonalisation/cynicism (1-5) (n=166)	1.90 (0.57)	1.75 (0.52)	0.16 (0.50)	4.02	<0.001
Reduced personal accomplishment (1-5) (n=168)	2.29 (0.49)	2.25 (0.52)	0.03 (0.51)	0.80	0.43
SCL5 (Hopkins symptom checklist:					
Score (1-5) (n=181)	2.84 (1.08)	2.07 (0.92)	0.77 (0.96)	10.73	<0.001
Score indicates caseness	131/181 (72.3; 65.8 to 78.8)	73/181 (40.3; 33.1 to 47.4)	58/181 (32; 25.2 to 38.8)	—	<0.001*
Total job stress:					
Score (1-5) (n=177)	2.40 (0.70)	1.97 (0.61)	0.43 (0.67)	8.52	<0.001

*McNemar.

WHAT IS ALREADY KNOWN ON THIS TOPIC

Previous research on doctors' mental health has documented need for interventions to prevent burnout and distress

Few evaluations of such interventions have been published, and follow-up times have been short

WHAT THIS STUDY ADDS

A short term counselling intervention could contribute to reduction of emotional exhaustion (one dimension of burnout)

Reduction in emotional exhaustion was associated with reduction in working hours, and, among men, satisfaction with the intervention predicted reduction in exhaustion

strengthened by our adjustment for neuroticism, which can influence the perception of distress variables towards reporting negatively. The non-significant differences in reduction of distress parameters for doctors prompted ("referred") by a colleague compared with attending on their own initiative strengthens the generalisability.

The study has several limitations, principally the opportunistic design that impedes determination of a causal relation to the intervention. The regression analysis, however, indicates an association between intervention and outcome.

We did not find any association between the change in stress levels and attending an additional intervention during follow-up, which increases the generalisability of the study. The regression analyses for each sex are subject to possible type II errors. Near significant associations found should be studied in larger samples to ascertain sex differences. Recall bias, especially concerning sick leave and working hours during the preceding year, could be an issue.

Strengths and weaknesses in relation to other studies

A study of a self referral specialist service for doctors in England[13] as well as the cross sectional study of our programmes[5] suggest that such services can lead to earlier engagement. The increase after the intervention in treatment seeking indicates increased acknowledgment (possibly perception) and acceptance of personal needs, and perception of high levels of emotional distress has been shown to predict professional help seeking.[14]

The personality dimensions of neuroticism and introversion predict burnout in doctors but are also important for functioning well. Self criticism, closely related to neuroticism, is associated both with depressive symptoms as well as with a higher capacity for empathy. Support related to these personality dimensions would thus help doctors towards sound mental health in combination with good performance and empathic ability.[15]

Work hours vary between countries, with longer average hours in the United States and in the United Kingdom than in Norway. Work hours and burnout will be influenced by the norms of the particular society. This could explain the positive impact of reduced working hours on reduction in emotional exhaustion as seen in the US as well as after the individually initiated reduction in work hours found in our study.

Male doctors have previously reported more stress caused by job demands,[10] whereas female doctors have reported more stress related to the work-home interface,[10] and women value social support at work more. Our chosen outcome variables possibly did not adequately reflect the more complex matters and multiple factors in the work-home interface and social relations at work.

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Competing interests: KEIR has been employed at the resource centre, Villa Sana, and was reimbursed for a presentation of preliminary results at an internal meeting at the Norwegian Medical Association.

Ethical approval: The study was approved by data inspectorate through the Norwegian Social Science Data Services. The regional ethical research committee in the south of Norway did not consider consent necessary for this study. All doctors gave written informed consent.

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Alcohol consumption and alcohol counselling behaviour among US medical students: cohort study

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ABSTRACT

Objective To determine which factors affect alcohol counselling practices among medical students.

Design Cohort study.

Setting Nationally representative medical schools (n=16) in the United States.

Participants Medical students who graduated in 2003.

Interventions Questionnaires were completed (response rate 83%) at the start of students' first year (n=1846/2080), entrance to wards (typically during the third year of training) (n=1630/1982), and their final (fourth) year (n=1469/1901).

Main outcome measures Previously validated questions on alcohol consumption and counselling.

Results 78% (3777/4847) of medical students reported drinking in the past month, and a third (1668/4847) drank excessively; these proportions changed little over time. The proportion of those who believed alcohol counselling was highly relevant to care of patients was higher at entrance to wards (61%; 919/1516) than in final year students (46%; 606/1329). Although students intending to enter primary care were more likely to believe alcohol counselling was highly relevant, only 28% of final year students (391/1393) reported usually or always talking to their general medical patients about their alcohol consumption. Excessive drinkers were somewhat less likely than others to counsel patients or to think it relevant to do so. In multivariate models, extensive training in alcohol counselling doubled the frequency of reporting that alcohol counselling would be clinically relevant (odds ratio 2.3, 95% confidence interval 1.6 to 3.3) and of reporting doing counselling (2.2, 1.5 to 3.3).

Conclusions Excessive drinking and binge drinking among US medical students is common, though somewhat less prevalent than among comparably aged adults in the US general population. Few students usually discussed alcohol use with patients, but greater training and confidence about alcohol counselling predicted both practising and believing in the relevance of alcohol counselling. Medical schools should consider routinely training students to screen and counsel patients for alcohol misuse and consider discouraging excessive drinking.

INTRODUCTION

Each year, excessive alcohol consumption kills about 79 000 people in the United States,[1] making it the third leading preventable cause of death.[2] In the US, however, few health providers ask patients about their alcohol use.[3 4] It is not clear how medical students' experiences and drinking behaviours might relate to their opinions or subsequent practices.

We investigated the drinking habits of medical students and any association between these habits and personal, professional, and school based characteristics. We also examined whether a belief that alcohol counselling was highly relevant to intended specialty and self reported frequency of alcohol counselling were associated with variables that could be influenced in medical school.

DESIGN

Study design

All medical students graduating in 2003 at 16 US medical schools were eligible to complete three questionnaires during their medical training: at first year orientation (summer/autumn 1999), entrance to wards (typically in their third year), and in their final year. Of the 2316 students who provided responses, 72% (n=1658) did so at more than one time point; 971 responded at three time points, 687 at two, and 658 at one.

Description of variables

The three questions on alcohol have been used in a large national US survey and have been validated previously.[5] Based on responses to these questions, medical students were classified into one of three groups: excessive drinkers, non-excessive drinkers, or non-drinkers (see bmj.com).

Our primary professional outcomes were two variables concerning medical students' counselling of patients on alcohol: the perceived relevance of alcohol counselling in the student's intended practice ("How relevant do you think talking to patients about alcohol will be in your intended practice?") and validated[6] frequency of alcohol counselling ("With a typical general medicine patient, how often do you actually talk to patients about alcohol?").

Statistical analysis

We tested the bivariate associations between our three outcomes (drinking, counselling relevance, and counselling frequency) and independent variables with χ^2 test. Because of the number of associations being tested, we limited our discussion of significant results to those with $P<0.01$.

We used logistic regression analysis to assess the relation between the perceived relevance and frequency of counselling with three independent variables: the amount of training in alcohol counselling ("extensive" versus less than extensive); the degree of agreement with the statement, "Physicians have a responsibility to promote prevention with their patients"; and alcohol consumption in the past

month. We adjusted for potential confounders, including sex and current intended specialty.

RESULTS

Most (78%, 3777/4847) students reported drinking alcohol in the past month, and 34% (1668/4847) drank excessively (540/2227 (24%) women and 1126/2615 (43%) men); these proportions changed little over time at medical school. Although similar proportions of students who were intending to practise in primary and non-primary care drank alcohol, non-primary care students were more likely to drink excessively; this was true even after we adjusted for sex disparity in specialty choice. Those who did not drink excessively agreed more strongly that one would provide better counselling if one abstained or did not drink excessively. Academic and peer environment were also associated with drinking behaviours (table 1).

Among excessive drinkers, about three quarters of men and women drank on 14 or fewer days in the past month. On the days excessive drinkers consumed alcohol, 62% (696/1124) of men drank three or more drinks and 89% (478/539) of women drank two or more drinks. Furthermore, 18% (201/1124) of male and 22% (117/539) of female excessive drinkers reported that their usual alcohol consumption on days they drank met or exceeded binge levels (that is, five or more drinks for men, four or more drinks for women).

When asked how relevant speaking to patients about alcohol would be in their intended medical practice, students intending a primary care specialty were significantly more likely to answer "highly relevant"; this was the case for all time points in school ($P<0.01$). During their years of clinical training, students' perception that alcohol counselling was highly relevant declined from 76% (330/432) to 59% (241/406) among those intending to pursue primary care specialties, and from 52% (397/767) to 39% (344/886) among those intending non-primary care specialties. Only a minority at either entrance to wards (19%; 294/1510) or the final year (35%; 458/1321) thought they had extensive training in alcohol counselling, although nearly all said they had at least some training by senior year. Overall, 28% (391/1393) of seniors reported usually or always talking to their general medical patients about their alcohol consumption.

Nearly half (46%; 606/1330) of final year students considered alcohol counselling highly relevant to their intended specialty (see bmj.com). Extensive training in alcohol counselling was associated with over twice the odds of final year students believing that alcohol counselling would be relevant to their practice (adjusted odds ratio 2.3, 95% confidence interval 1.6 to 3.3) and reporting that they often counselled patients about their alcohol consumption (2.2, 1.5 to 3.3) (table 2). Personal alcohol consumption (that is, being either a non-drinker or non-excessive drinker) and belief in one's responsibility to promote prevention were somewhat (but non-significantly) associated with talking with patients about alcohol consumption.

DISCUSSION

In this study of alcohol consumption among US medical students about a third (24% of women and 43% of men) reported excessive drinking in the previous month, typically in the form of binge drinking, and usually (among excessive drinkers) on multiple occasions, with frequencies changing little

Table 1 | Alcohol consumption among US medical students (1999-2003) and its association with attitudinal and environmental characteristics

Characteristic	No of students	Alcohol consumption in past month: None (%)	Non-excessive (%)	Excessive (%)	χ^2 P value*	Adjusted odds ratio (95% CI)†
"I will be able to provide more credible and effective counselling if I drink alcohol in moderation or not at all":						
Strongly agree	313	27	48	25	0.0001	1.0
Agree	744	21	45	34		1.5 (1.1 to 2.1)
Neither agree/disagree	218	17	38	45		2.3 (1.5 to 3.3)
Disagree/strongly disagree	83	8	27	65		5.0 (2.9 to 8.7)
Peers' attitudes toward alcohol use‡:						
No obvious attitude	314	26	43	31	0.03	1.0
We shouldn't drink	57	46	25	30		0.9 (0.2 to 3.6)
We should drink in moderation	1225	23	46	31		1.1 (0.7 to 1.7)
Drinking is a good release	1316	19	41	39		1.6 (1.3 to 2.0)
School's attitude toward alcohol‡:						
No obvious attitude	832	20	47	34	0.006	1.0
We shouldn't drink	356	55	29	15		0.3 (0.1 to 0.8)
Drink in moderation	1426	15	47	39		1.3 (1.03 to 1.6)
Drinking is a good release	305	24	35	42		1.3 (0.96 to 1.7)

*χ^2 test for association in contingency tables.
†Odds ratio of excessive drinking (*v* non-excessive/non-drinkers) compared with reference group (odds ratio=1.0), controlled for sex.
‡Questions asked only at introduction to wards and during final year.

over time at medical school. Only a quarter of final year students routinely assessed their patients' drinking behaviours, and students' perceptions of the relevance and frequency of performing alcohol counselling were significantly associated with their training in alcohol counselling; only half of final year students reported that they were highly confident about their ability to discuss alcohol with their patients.

Comparison with other populations and literature

Our reported rates of binge drinking were lower than the 51% of 18-24 year olds, and 40% of 25-34 year old Americans in 2002 who reported consuming five or more drinks at least once in the past month[7] and lower than the rates in 1999 US college seniors (45% in the past two weeks, both for highly competitive colleges and for all final year students).[8]

Screening and counselling for alcohol misuse in adults in primary care, including non-dependent excessive drinking (such as binge drinking), are strongly recommended by the US Preventive Services Task Force[9] and are consistent with the conclusions of the Institute of Medicine about the importance of "broadening the base" of alcohol counselling to include all patterns of alcohol consumption that increase the risk of health problems.[10] Furthermore, screening and brief counselling interventions are particularly high impact and cost effective clinical preventive services,[11] and a high proportion of conditions leading to medical visits and inpatient admissions are alcohol related or are exacerbated by excessive drinking.[12 13] None the less, our finding that less than a third of students routinely counsel general medical patients about their alcohol consumption is consistent with studies that show only a small proportion of patients are screened by physicians about their alcohol use.[3-14] Our findings are also consistent with other studies pointing to a lack of adequate or appropriate training in alcohol counselling as an important contributor to low rates of screening.[15-18]

In bivariate analysis, excessive drinking was associated with lower perceived relevance and frequency of alcohol counselling; findings were similar but not significant in multivariate analysis. A relation between personal and clinical practices has been found among US physicians for many behaviours, including drinking alcohol and counselling patients about alcohol: only 32% of female physicians who reported drinking more than two drinks a week (the 75th centile for alcohol intake) typically counselled patients about alcohol at least once a year compared with 42% of those who drank two or fewer drinks a week (P<0.001 for the

Table 2 | Multivariate testing of association of training, drinking, and prevention attitudes with perceived relevance and self reported frequency of alcohol counselling among US medical school seniors (2002-3). Odds ratios are adjusted* and presented with 95% confidence intervals and P values†

	Relevance to intended specialty (n=1215)	Frequency of counselling (n=1237)
Modifiable characteristics		
Training in alcohol counselling:		
None/some	1.0	1.0
Extensive	2.3 (1.6 to 3.3)	2.2 (1.5 to 3.3)
P value	0.0002	0.0006
Alcohol drinking in past month:		
Excessive	1.0	1.0
Non-excessive	1.0 (0.7 to 1.3)	1.2 (0.8 to 1.9)
None	1.4 (0.9 to 2.3)	1.4 (0.9 to 2.1)
P value	0.1	0.3
Physicians have a responsibility to promote prevention with their patients:		
Strongly agree	1.4 (0.8 to 2.4)	1.9 (0.8 to 4.4)
Agree	1.1 (0.7 to 1.6)	1.3 (0.6 to 2.7)
Neutral/disagree/strongly disagree	1.0	1.0
P value	0.09	0.08
Control variables		
Sex:		
Female	1.5 (1.2 to 1.9)	1.1 (0.8 to 1.4)
Male		1.0
P value	0.002	0.6
Current intended specialty:		
Primary care	2.2 (1.8 to 2.8)	1.0 (0.7 to 1.3)
Non-primary care	1.0	1.0
P value	<0.0001	0.9

*Odds of reporting "highly relevant" or "usually/always" compared with reference group, adjusted for all other variables listed.†Satterthwaite adjusted F test for significance of covariate adjusted relation of characteristic with outcome.

WHAT IS ALREADY KNOWN ON THIS TOPIC

Screening and brief counselling help to reduce excessive alcohol consumption and related harms

Drinking behaviours among medical students have important implications for the health of the general population

WHAT THIS STUDY ADDS

The prevalence of binge drinking among US medical students is somewhat lower than their peers in the general population, though still quite high and substantially higher than rates reported by US female physicians

Few medical students usually discussed alcohol with patients, but as personal and educational characteristics are associated with their perceived relevance and frequency of counselling, interventions on these characteristics could improve students' rates of alcohol counselling

difference between the two groups' counselling rates).[19]

Weaknesses

Although not all students responded during all three time periods, response rates for each time period exceeded 75%. Data are limited by being survey data (rather than qualitative or interview) from schools with variations within and between them and from self report. Our question on frequency of alcohol counselling, however, was validated with extensive standardised testing,[6] with a strong relation shown between medical students' self reported alcohol counselling and their actual counselling, as reported by standardised patients. While we have validated some of our data on personal health practice,[20] rates of binge drinking are difficult to validate and are likely to be underestimated because of bias due to social desirability, particularly among health professionals. In addition, we did not use a sex specific definition of binge drinking and might have underestimated the prevalence of binge drinking among women.

Medical students' personal and clinical attitudes about alcohol have important implications for their current care of patients. Furthermore, drinking practices in young adulthood help to establish patterns for later drinking.[21] If medical students are better educated about guidelines for low risk drinking and screening and counselling for alcohol misuse, they might be more likely to adhere to clinical prevention guidelines and be better equipped to identify and reduce excessive drinking among their patients. Medical schools should also consider supporting the implementation of effective interventions to reduce excessive drinking among medical students and the general population.[22-24]

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Five year outcomes in a cohort study of physicians treated for substance use disorders in the United States

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ABSTRACT

Objective To evaluate the effectiveness of US state physician health programmes in treating physicians with substance use disorders.

Design Five year longitudinal cohort study.

Setting Purposive sample of 16 state physician health programmes in the United States.

Participants 904 physicians consecutively admitted to one of the 16 programmes from September 1995 to September 2001.

Main outcome measures Completion of the programme, continued alcohol and drug misuse (regular urine tests), and occupational status at five years.

Results 155 of 802 physicians (19.3%) with known outcomes failed the programme, usually early during treatment. Of the 647 (80.7%) who completed treatment and resumed practice under supervision and monitoring, alcohol or drug misuse was detected by urine testing in 126 (19%) over five years; 33 (26%) of these had a repeat positive test result. At five year follow-up, 631 (78.7%) physicians were licensed and working, 87 (10.8%) had their licences revoked, 28 (3.5%) had retired, 30 (3.7%) had died, and 26 (3.2%) had unknown status.

Conclusion About three quarters of US physicians with substance use disorders managed in this subset of physician health programmes had favourable outcomes at five years. Such programmes seem to provide an appropriate combination of treatment, support, and sanctions to manage addiction among physicians effectively.

INTRODUCTION

About 10-12% of physicians in the United States develop a substance use disorder.[1] Such physicians are usually referred by colleagues or regulatory agencies to a physician health programme. A contract is then arranged, with no further action pending satisfactory completion of treatment, followed by five years of regular monitoring.

Initially we surveyed 42 of 49 active programmes in the United States to obtain an overview of the characteristics of the programmes and affected physicians. In this longitudinal cohort study we report on three outcomes (completion of the programme, continued alcohol and drug misuse, occupational status at five years) in 904 physicians consecutively admitted to a purposive sample of 16 of those programmes and followed for five years.

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METHODS

We carried out a retrospective longitudinal cohort study from 1 September 1995 to 1 September 2001 of all 904 physicians consecutively admitted to these 16 physician health programmes sampled. The mean number of physicians in each programme was 76 (range 11-119). We restricted the evaluation to objective data from official records and laboratory results of drug screening tests. We carried out analyses on 802 physicians, as 102 (11.3%) had moved out of their state programme's jurisdiction during the study (see bmj.com). The participants were predominantly men (87%). The average age was 44 years.

The primary drug problems were alcohol (50%), opiates (36%), stimulants (8%), or other (6%). Fifty per cent reported misusing more than one substance and 14% reported a history of intravenous drug use. The average duration of substance misuse was five years. Seventeen per cent had been arrested for an alcohol or drug related offence and 17% reported previous treatment for substance misuse.

Fifty five per cent of participants were formally mandated to enter a programme by a licensing board, hospital, insurer, or other agency. The remaining 45% were informally mandated by families, colleagues, or employers.

Clinical and monitoring procedures

A typical programme comprised treatment at an addiction programme and supervision after treatment. Overall, 78% of physicians entered residential treatment (mean 72 days, range 30-90), usually followed by outpatient treatment (1-3 nights weekly) for 6-9 months. The remaining 22% went directly to outpatient treatment. With good compliance and progress, physicians returned to work under supervision about six months after the start of treatment.

Most treatment (95%) was 12 step oriented, with the goal of total abstinence.[2,3] Use of addiction pharmacotherapy was rare. A key component of monitoring after treatment was random drug testing. Urine was tested in 99% of physicians, with rare use of hair, saliva, and breath. Participant testing was at random on workdays and included 20 substances (not the usual five).

Participants were expected to attend appointments for evaluation. They also received random monitoring visits at their workplace. If substance use was detected almost all the programmes reacted with combinations of re-evaluation (54%), increased monitoring (43%),

and intensified treatment (46%). Forty two per cent of programmes also reported the incident to a licensing board, hospital, or other entity, and an additional 16% started probationary periods without referral to a regulatory agency. The same increases in monitoring occurred for physicians with more than one incident of substance misuse but almost always with a formal report to the licensing board. In turn, licensing boards limited practice, temporarily suspended or revoked licences, placed physicians' names in the national monitoring databank, or restricted licences to limit prescription of controlled drugs.

RESULTS

Of the 802 physicians with known outcomes, 155 (19.3%) failed to complete their contracted period of treatment and supervision. More than half of these (n=85) voluntarily stopped their licences during monitoring (advanced age, finances, psychiatric or other health problems). An additional 48 had their licences revoked owing to significant relapse. Twenty two died (six from suicide) during participation and another eight had died by the five year follow-up (see bmj.com).

In total, 515 physicians completed their contracted period. Sixty seven of these asked to continue being monitored after their contract ended. Contracts were extended for 132 physicians because of failure to comply with requirements, such as therapy or because of previous relapse.

Fifty seven of 515 physicians who completed their contract and 69 of 132 with extended contracts had a positive alcohol or drug test result at some point during a mean of 56 months; 33 of these 126 retested positive. Of 159 documented incidents of substance misuse across both groups (126 initial positive results, 33 repeat positive results), 10 were in the context of medical practice, such as on duty or on call. One episode of patient harm (over-prescribing drugs) was recorded.

Five years after the start of the contracts 631 of the 802 physicians (78.7%) were licensed and either practising medicine or working in a non-clinical capacity (see bmj.com). An additional 28 had retired or voluntarily left practice, 87 had their licence revoked, 30 had died (7 substance misuse, 6 suicides, 17 other), and 26 had missing data. The status of the physicians at five year follow-up varied predictably according to their completion status of the programme.

DISCUSSION

About three quarters of US physicians treated for substance use disorders in physician health programmes had favourable outcomes throughout five years. Such programmes seem to provide an appropriate combination of treatment, support, and sanctions to manage addiction among physicians effectively.

We carried out a longitudinal retrospective cohort study of 904 physicians consecutively admitted to 16 state physician health programmes. Objective outcomes were derived exclusively from laboratory results of urine testing and audit of official records.

All the participants entered some period of professional, specialty treatment, typically 60-90 days in a residential setting followed by continuing outpatient care. Formal treatment was followed by a return to work conditional on continued participation in 12 step support groups, formal meetings with the programme monitor, random alcohol and drug testing, and random visits by programme staff at the workplace.

Over the average course of 56 months of random testing in 647 physicians who completed their contract and those with extended contracts, combined with unannounced visits to the workplace, 521 (81%) had no identified substance misuse. One hundred and twenty six (20%), however, had at least one incident of substance misuse during the five years of monitoring. Ten of these were in the context of patient care (on duty or on call) and one instance of patient harm was recorded (over-prescribing drugs). In such instances most of the programmes increased the intensity of care and the frequency of drug testing and supervisory visits. The more serious sanctions included restrictions on, or suspensions of, licences or prescription privileges.

At five year follow-up 78% were still employed in good standing but 15% had stopped practising medicine (11% involuntarily) and 4% had died.

Limitations

Our study has several limitations. Firstly, our sample cannot be considered nationally representative of physician health programmes in the United States. Because of financial and time constraints we needed to audit primary, objective outcome measures rapidly, and only 16 of the 42 programmes that volunteered had electronic records continuously available from 2001 to 2007. Data from the first survey indicated that the programmes included larger samples (mean 76 *v* 68), with correspondingly larger budgets; but, importantly, the duration of the programmes, their clinical,

WHAT IS ALREADY KNOWN ON THIS TOPIC

10-12% of physicians in the United States become addicted to alcohol and other drugs

Addicted physicians receive treatment through physician health programmes, operating under jurisdiction of state licensing boards

WHAT THIS STUDY ADDS

Most US physicians with substance use disorders managed in physician health programmes had favourable outcomes at five years

During monitoring 81% had negative urine test results

Most (95%) who completed monitoring were licensed and working as physicians at five years

administrative, or sanctioning approaches, and the procedural elements of care did not differ.

A second limitation is that we recorded only objective, verifiable information from records. We are confident of the validity of these records, and our results are consistent with most other published studies of physicians with substance use disorders.[4-7]

Finally, the focus on official records made it impossible to track the 102 physicians who moved out of their programmes' jurisdiction. Although most of these physicians (n=78) were in good standing at the time of transfer, longer term results cannot be inferred; 24 had moved away without contacting their programme, suggesting an attempt to avoid monitoring.

Conclusions

Evidence from our study suggests that the combination of identification, intervention, treatment, support, and monitoring by physician health programmes is effective in rehabilitating most addicted physicians, over at least five years. We believe that most physicians who could not or would not stop misusing substances were detected early and this usually resulted in cessation of practice.

It is not possible from the evidence here to prove whether this form of support and monitoring is appropriate, too harsh, or too permissive. Any episode of substance use in the context of patient care has the potential for significant harm. On the basis of these data, and considering available alternatives, physician health programmes seem to provide the best available measures for protecting patients and for recovering physicians' careers.

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Ethical approval: This study was approved by the institutional review board of the Treatment Research Institute, Philadelphia.

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Characteristics and outcomes of doctors in a substance dependence monitoring programme in Canada: prospective descriptive study

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ABSTRACT

Objective To describe the characteristics at enrolment and outcomes of doctors in a substance dependence monitoring programme in Canada.

Design Prospective descriptive study.

Setting Provincial physician health programme, Canada.

Participants All 100 doctors consecutively admitted to a substance dependence monitoring programme and followed until completion of monitoring or on leaving the programme.

Main outcome measure Relapse during long term monitoring for five years.

Results Ninety per cent of the doctors enrolled on the programme were men, 66% were married or living with a partner, 44% had had previous treatment for substance dependence, and 36% had had previous psychiatric treatment. Smokers were over-represented compared with the general population of US doctors (38% *v* 5%). During the monitoring period 71% of participants had no known relapse. An additional 14% went on to complete the programme, after some form of relapse. In total, 85% of the doctors successfully completed the programme.

Conclusion In this cohort of doctors enrolled on the Ontario Physician Health Program for substance dependence, most were men who were dependent on alcohol or opioids. Smokers were over-represented compared with the general population of US doctors. Eighty five per cent successfully completed the programme.

INTRODUCTION

Programmes to help doctors who are dependent on substances such as drugs and alcohol exist in every US state[1] and every Canadian province,[2] in collaboration with medical associations or regulatory bodies. The British Medical Association also has developed a peer

support programme.[3] Descriptions of participants with drug related problems in physician health programmes consistently show that alcohol is the most common drug of choice, followed by opioids, and that multiple drug use is common.[4-7] Female doctors are generally under-represented as participants.[6-8] Among these doctors, long term recovery rates are higher than those for substance use disorders in the general population, often exceeding 85%.[4 8-10]

In Canada the Ontario Physician Health Program is among the largest of such programmes and, by 2002, had enrolled 100 doctors for monitoring recovery from substance dependence. Recovering doctors who choose monitoring are enrolled by a case manager from the programme after they have been diagnosed as dependent on substances, successfully treated, and established in early stable remission. Contract requirements for monitoring include visits to an addiction medicine doctor, visits to a family doctor for routine health needs, attendance at facilitated health professional support groups, attendance at mutual support groups in the community, monitoring in the workplace, and random screening of urine for alcohol and drugs of misuse. The usual agreement for monitoring is five years of continuing progress in recovery. Contingencies built into the monitoring agreement can result in details of the case being reported to the College of Physicians and Surgeons of Ontario, the regulatory body, when aspects of the contract are breached.

By the end of 2007 all of the first 100 doctors enrolled on the Ontario Physician Health Program for monitoring of substance dependence had completed contracts. We describe these doctors and their outcomes.

METHODS

Participants were the first 100 doctors enrolled in the Ontario Physician Health Program for monitoring of substance dependence after the formation of the programme in 1995. All were diagnosed as dependent on substances according to criteria of the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, and treated for substance dependence, usually in a residential abstinence based programme for 4-6 weeks, before entering the monitoring programme.

Intake measure and outcome measure (relapse)

On entering the monitoring programme, the doctors completed a clinical intake questionnaire detailing personal characteristics, history of substance misuse in the family, professional education and practice, licensure, history of substance use, treatment history, psychiatric history, and experience of physical and emotional abuse.

While being monitored by the physician health programme, any use of alcohol or an illicit drug or use of any psychoactive drug not prescribed by a participant's doctor was considered to be relapse. Relapse ranges from single use to full resumption of dependence on substance use. After brief relapse, participants may continue the monitoring programme to successful completion; more serious relapse may lead to the doctor having to restart the programme under a new contract or leaving the programme.

WHAT IS ALREADY KNOWN ON THIS TOPIC

Studies have shown a high rate of successful outcomes in doctors enrolled on monitoring programmes for substance dependence

WHAT THIS STUDY ADDS

In a sample of 100 doctors consecutively admitted to a physician health programme, most were men and the drugs of dependence were alcohol or opioids

After abstinence based residential treatment, 85% of the doctors successfully completed the comprehensive programme of monitoring with contractual contigencies

Data analysis

The data were analysed using SPSS version 15.0. We summarised the characteristics of participants using frequencies for categorical variables and means and standard deviations for continuous variables.

RESULTS

In total, 90% of participants were men; two thirds (66%) were married or living with a partner (see bmj.com). The mean (SD) age at enrolment was 45 (11) years, with a mean (SD) years experience of medical practice of 16 (11) years. Almost a half (48%) were in general practice or family practice. Most practised patient care in single or group practices, and most practised in urban areas, with communities of 100 000 or more. These characteristics were generally similar to the population of Ontario doctors (Member Services Department, Ontario Medical Association). The licences of two thirds (69%) of participants were unaffected at the time of enrolment; the remainder (31%) were suspended or restricted (mostly to prevent the prescribing of narcotics). Two thirds of participants enrolled to satisfy a requirement of the College of Physicians and Surgeons of Ontario.

Half of the participants (51%) used alcohol as their primary drug of choice, one third opioids (37%), and the remainder (36%) other drugs such as benzodiazepines, stimulants, or illicit drugs such as cannabis or cocaine. Nearly half (44%) had received drug related treatment at some time before the most recent treatment. More than a third (38%) were current smokers, higher than the current rate of smoking among the general population of US doctors, which is about 5%.[11] Thirty six per cent of the participants had had psychiatric treatment in the previous five years. More than half (60%) reported ever experiencing some form of physical or emotional abuse.

During the monitoring period 71% of participants had no known relapse. An additional 14% went on to complete the monitoring programme after some form of relapse. In total 85% of the doctors successfully completed the programme.

DISCUSSION

Doctors who entered the Ontario Physician Health Program for substance use dependence were typically middle aged, married men dependent on alcohol or opioids. Overall, 85% of the participants successfully completed the programme.

The strength of our study is that the participants were 100 doctors consecutively admitted for monitoring of substance dependence in a physician health programme, without selection. Results were accumulated over 10 years, the time taken for 100 doctors to complete at least five years of monitoring.

One possible weakness of the study is that the characteristics of doctors entering the programme could change over this time span. Measures on the intake questionnaire were by self report and subject to the limitations of that method. Possibly we failed to identify some relapses, leading to misclassification of outcomes. The relatively small number of participants prevented us from studying the relation between characteristics of the participants at intake and relapse.

This profile of the personal characteristics of the participants and their practices is typical of other reports of participants in physician health programmes, where women are under-represented.[4-8] The high rate of smoking among the participants compared with the general population of US doctors (38% *v* 5%) and the high success rate is comparable to that of other North American physician health programmes that report outcomes for monitoring substance dependence.[4 8-10]

Doctors entering a substance dependence monitoring programme are more likely to be men and to be smokers than other doctors. They are usually known to the licensing body. Their primary drugs of choice are alcohol or opioids. A structured monitoring programme after abstinence based primary treatment for these substance dependent doctors, with regulatory contingencies for lack of adherence, can produce successful results. Further research is needed to examine the relation of the characteristics of the doctors and components of the programme to relapse, so that monitoring can be tailored to the specific needs of participants.

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Competing interests: None declared.
Ethical approval: This study was a secondary analysis of an anonymous clinical database. It was approved by the Health Sciences Research Ethics Board of the University of Toronto.
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Closing the door after the horse has bolted: a new red flag for GPs?

Jim had smoked heavily and unrepentantly since childhood. He also had a cardiomyopathy and type 2 diabetes (the latter was appallingly controlled—he enjoyed sitting in front of the computer through the night downloading music, smoking, and eating chocolate bars). For years we had battled with his lifestyle—at least I battled, and he carried on with his old habits.

When he told me he had just stopped smoking—and wasn't missing it—I was curious, and felt a sense of dread. He had had a chest infection and his chest x ray was abnormal and being followed up. It transpired that he had lung cancer.

A year or so later another of my determined smokers went off her cigarettes. She had a lump in her neck, which turned out to be a metastasis from lung cancer. She restarted smoking during her final illness, but it was still striking how she had "just stopped" before she realised she was ill.

After I discussed this at work, my partner started to ask me if people had "Millar's sign" when I talked about their coughs. Since then, two more patients who turned out to have lung cancer have shown the same phenomenon. I now regard stopping smoking without a struggle as a bad sign and request a chest x ray. Only one person who has given up effortlessly has had a clear x ray—and he was later found to have an abdominal aortic aneurysm.

I wonder if this sign should be regarded as analogous to unintentional weight loss and be a GP "red flag" sign?

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